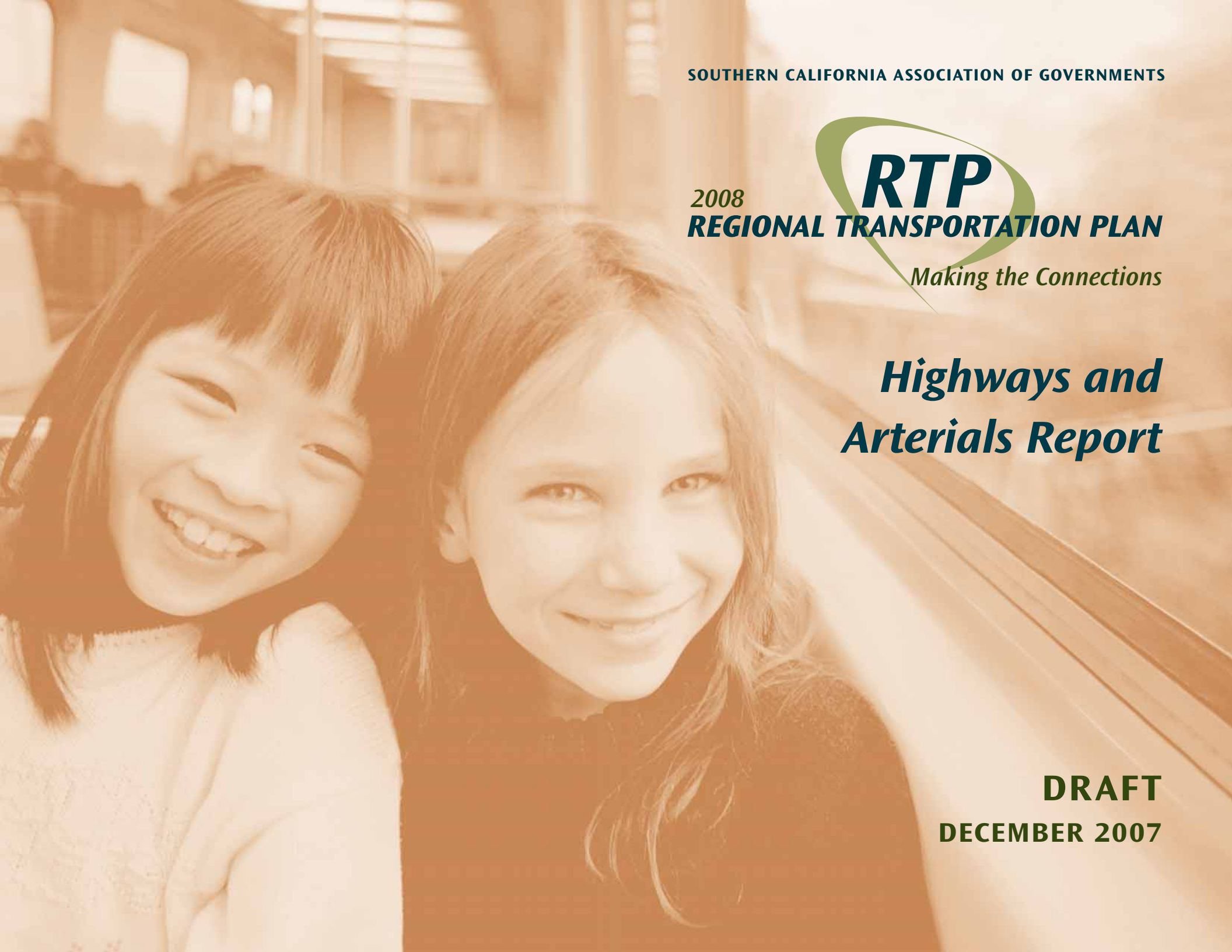


SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

2008
RTP REGIONAL TRANSPORTATION PLAN

Making the Connections

Highways and Arterials Report

DRAFT

DECEMBER 2007

HIGHWAYS AND ARTERIALS

Introduction

Southern California's highway and arterial system is the backbone of the region's economic well-being; facilitating the movement of people and goods to and from activity centers, including the region's airports and seaports. Perhaps nowhere else has the automobile and its use been more associated with, and integral to, a way of life than in Southern California. Consequently, the highway and arterial system has played an important role in the access to commercial and cultural activities through our the region. The system encompasses multiple modes of transportation, including public transit and bicycle travel. According to the Southern California Association of Government's (SCAG) Regional Travel Demand Model (RTDM), nine out of every ten trips relies either entirely or in part on the highway and arterial system.

Despite the importance of the system, improvements and additions to the system have not kept pace with the region's increasing population and transportation demand. This has been due to the rising costs of system improvements, which has resulted from increased environmental awareness, community opposition, and rising costs of materials. These increases in cost have been further amplified by the decline in the primary source of transportation funding, the gasoline excise tax.

Consequently, the region's traffic congestion has increased dramatically, leading to a less productive transportation system with negative consequences such as wasted time and fuel and poor air quality. The preservation, management, and selective expansion of the highway and arterial system are crucial to maintaining the region's economic vitality and quality of life.

Therefore, this Plan is based on an integrated approach, discussed in more detail in "The Plan 2035 System" section, to maximize mobility. This approach is based on the premise of taking care of and making the most out of our existing system before investing in costlier expansion projects that are still recognized as necessary improvements to accommodate the region's projected growth. Strategies that are coordinated in such a manner will improve the mobility of our region, with results demonstrated using performance measures to ensure that the best performing projects are included in the Plan for funding.

The Existing System - Base Year 2003

SYSTEM DESCRIPTION

Southern California has over 20,717 center-line miles and over 258,796 lane-miles of roadways, including one of the most extensive High-Occupancy Vehicle (HOV) lane systems in the country. Additionally, the region has a growing network of toll lanes and High Occupancy Toll (HOT) lanes. Although freeways account for only 16 percent of the total system in terms of lane-miles, they carry over 50 percent of the total Vehicle Miles Traveled (VMT) and will continue to be the workhorse of the system. Regionally significant arterials provide access to the freeway system and often serve as parallel alternate routes; in some cases they are the only major system of transportation available to travelers. The arterial system, including collectors, carries just under half of all VMT. Table 1 provides a summary of the number of miles in the existing Base Year 2003 highways and arterials network.

TABLE 1 BASE YEAR 2003 NETWORK SUMMARY (TOTAL ALL FACILITIES)

County	Centerline Miles	Lane Miles
Imperial	1,698	3,744
Los Angeles	7,486	26,273
Orange	2,002	8,444
Riverside	3,254	9,344
San Bernardino	5,304	13,995
Ventura	974	2,971
Region	**20,717**	**64,623**

Note: Lane miles shown are for the AM Peak Period.

EXHIBIT 1 BASE YEAR 2003 REGIONALLY SIGNIFICANT ARTERIAL SYSTEM

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

EXHIBIT 2 BASE YEAR 2003 NUMBER OF FREEWAY LANES

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

EXHIBIT 3 BASE YEAR 2003 TOLL AND HOV LANES

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

MOBILITY

As the second-largest metropolitan area in the United States with over half of California's residents, the Southern California region is the most congested metropolitan area in the country. Utilizing its new RTDM, SCAG assessed the performance of the existing transportation system and identified system gaps and bottlenecks. Over the past twenty years, traffic delays have nearly tripled in the region, and the RTDM estimates the following alarming traffic delay statistics (delay defined as the difference in travel time between free flow conditions and actual conditions):

- 3.9 million vehicle hours of daily delay
- 5.7 million person hours of daily delay
- 15 minutes of delay per capita during peak commute periods

Almost as frustrating as daily recurrent delay is the variability of travel time. For example, trips that on average take 30 minutes often last much longer due to incidents, collisions, weather, special events, construction activities, or other difficult-to-predict conditions. The frequency of such unpredictable delays over and beyond "normal" congestion has been increasing steadily on our roadways. The combination of increasing congestion and decreasing predictability of travel times has led to our region's status as the congestion capital of the country.

Per capita data in this section is based on the Base Year average vehicle occupancy (AVO) for each county and the region as a whole (Table 2).

TABLE 2 BASE YEAR 2003 AVERAGE VEHICLE OCCUPANCY

County	AVO
Imperial	1.47
Los Angeles	1.46
Orange	1.40
Riverside	1.48
San Bernardino	1.50
Ventura	1.40
Region	**1.45**

As seen in Table 3, the SCAG Region loses 3.9 million vehicle hours each day due to delay, with the vast majority of those hours lost in Los Angeles County (2.6 million). However, when measured by delay per capita, Orange County experiences about 75 percent of the delay of LA County even though LA County's total delay is more than four times that of Orange County. Regionwide, the average speed on the region's roadways is 31 miles per hour, with only Riverside and Imperial Counties exp eriencing 40-mph speeds or greater.

TABLE 3 BASE YEAR 2003 DAILY VMT, VHT, DELAY, AND SPEED

County	VMT	VHT	Delay (hours)	Delay per capita (minutes)	Avg Speed (mph)
Imperial	4,942,000	104,000	7,000	4.0	47.5
Los Angeles	216,575,000	7,898,000	2,673,000	23.3	27.4
Orange	70,246,000	2,264,000	642,000	18.0	31.0
Riverside	43,819,000	1,100,000	205,000	10.4	39.8
San Bernardino	54,228,000	1,380,000	264,000	12.7	39.3
Ventura	18,620,000	522,000	114,000	12.0	35.7
Region	**408,429,000**	**13,268,000**	**3,904,000**	**19.3**	**30.8**

Numbers may not add due to rounding.

Table 4 shows the time and distance of the average home-based trip to work in the AM Peak Period. Regionwide, the average trip takes just under half an hour and is almost 14 miles long. Trips in San Bernardino and Riverside Counties are the longest in both time and distance.

TABLE 4 BASE YEAR 2003 HOME-BASED WORK TRIP AVERAGE TRIP LENGTH I AM PEAK

County	Time (minutes)	Distance (miles)
Imperial	13.57	9.39
Los Angeles	27.55	12.48
Orange	23.92	11.91
Riverside	32.59	18.21
San Bernardino	34.88	19.98
Ventura	25.89	14.49
Region	**27.83**	**13.68**

As previously stated, freeways account for only 16 percent of the total system in terms of lane-miles, yet carry approximately 50 percent of the total VMT. Table 5 shows that the average speed on our freeway's mixed flow lanes is just 40 mph, helping to contribute to the 1.9 million hours of daily delay on these lanes. This consists of nearly half of total delay on all types of roadways regionwide. It is also interesting to note that the average speed on an HOV lane is actually lower than on a regular mixed flow freeway lane.

TABLE 5 BASE YEAR 2003 DAILY VMT, VHT, DELAY, AND SPEED BY FACILITY TYPE

Facility Type*	VMT	VHT	Delay (hours)	Avg Speed (mph)
Freeway (MF)*	196,366,000	4,921,000	1,908,000	39.9
Freeway (HOV)*	9,498,000	242,000	94,000	39.2
Expressway	2,125,000	47,000	12,000	45.7
Principal Arterial	85,289,000	3,260,000	908,000	26.2
Minor Arterial	58,084,000	2,173,000	428,000	26.7
Major Collector	11,686,000	411,000	74,000	28.4
Minor Collector	1,089,000	44,000	6,000	24.7
Ramps	13,263,000	907,000	473,000	14.6
Centroid Connector*	31,030,000	1,263,000	N/A	N/A
Region	**408,429,000**	**13,268,000**	**3,904,000**	**30.8**

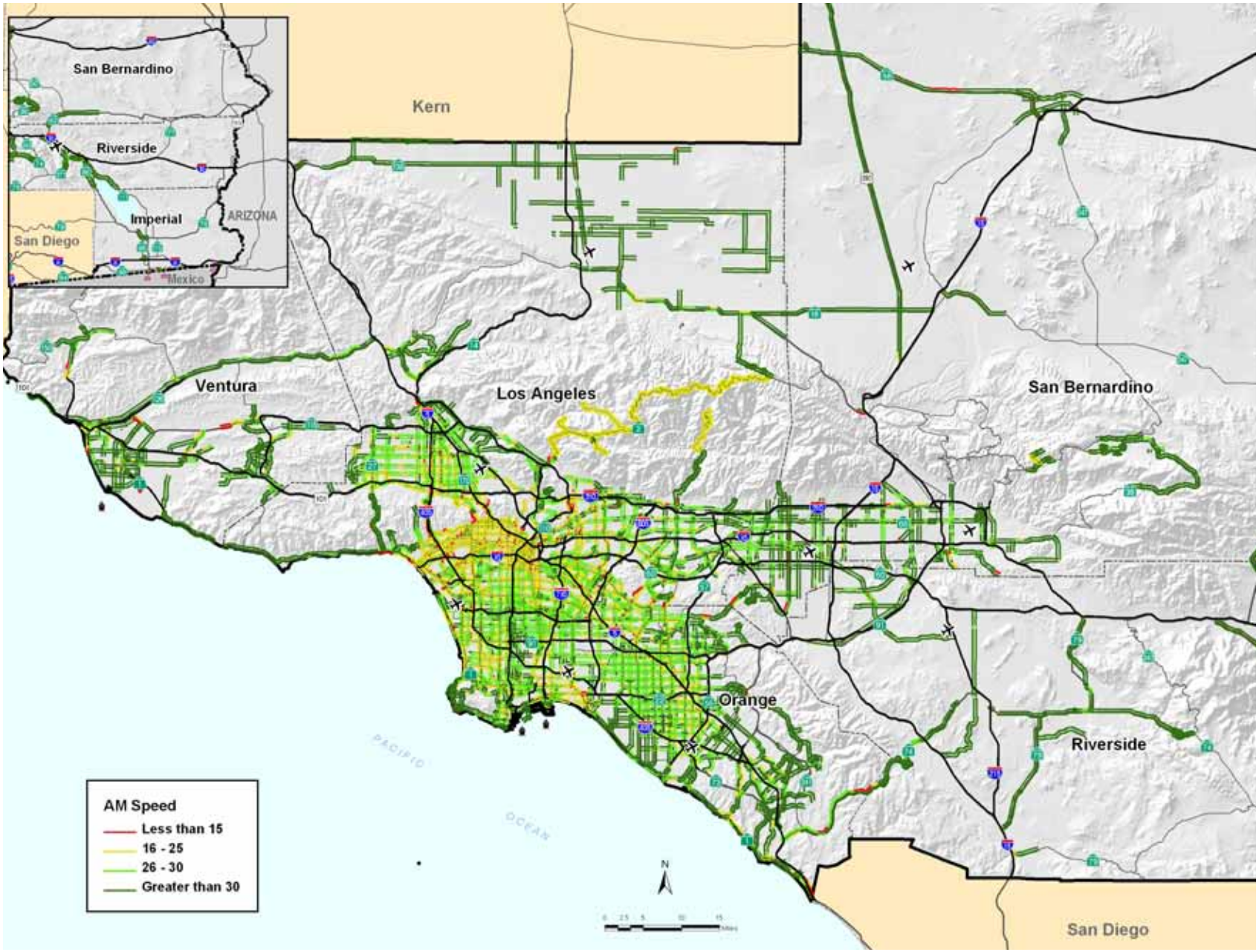
* Notes: MF for mixed flow or general purpose lanes, as opposed to HOV, high occupancy vehicle or carpool lanes. Centroid connectors are intra-zonal links used in regional travel demand models to allocate trips from zone centroids to the highway network.
Numbers may not add due to rounding.

The following maps show the current average speeds of the freeway and arterial system during the AM and PM Peaks based on SCAG's RTDM.

EXHIBIT 4 BASE YEAR 2003 FREEWAY SPEED | AM PEAK

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

EXHIBIT 5 BASE YEAR 2003 ARTERIAL SPEED | AM PEAK

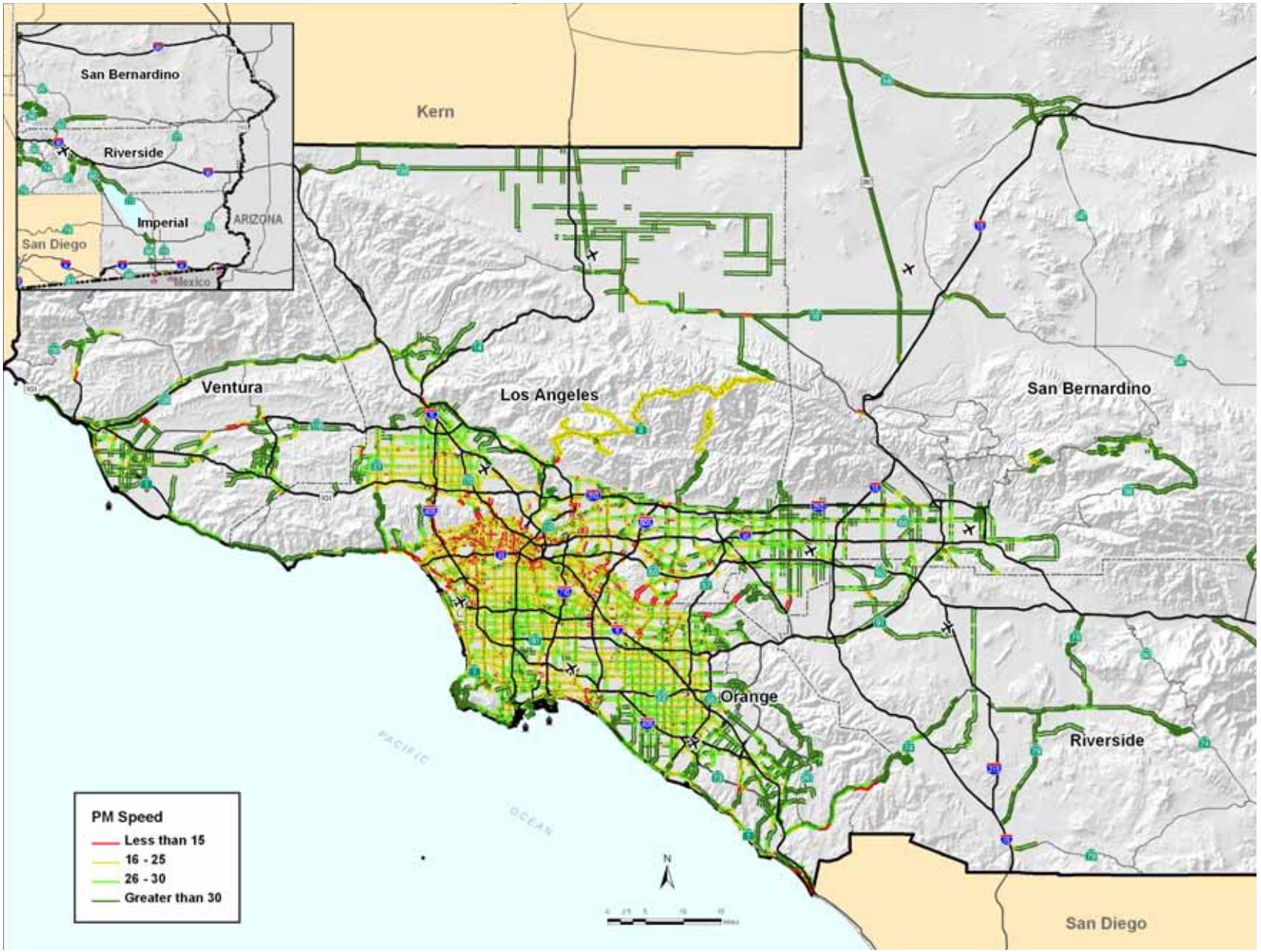


Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatla

EXHIBIT 6 BASE YEAR 2003 FREEWAY SPEED | PM PEAK

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

EXHIBIT 7 BASE YEAR 2003 ARTERIAL SPEED | PM PEAK



Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

ACCESSIBILITY

As Figure 1 shows, less than 80 percent of the region's commute trips during the PM Peak period can be completed in 45 minutes or less. While most counties have similar accessibiliy curves, two counties clearly stand out as extremes: Imperial, which has an accessibility that is higher than most counties, and Los Angeles, with lower accessibility.

FIGURE 1 BASE YEAR 2003 AUTO HOME-BASED WORK TRIP CUMULATIVE DISTRIBUTION | PM PEAK

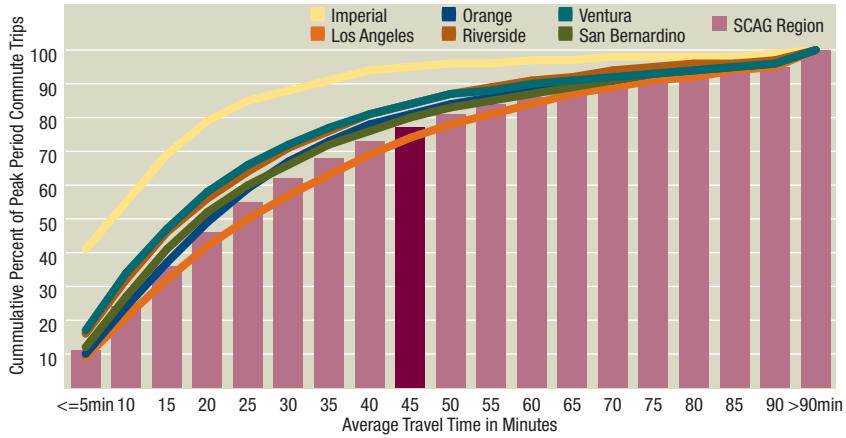
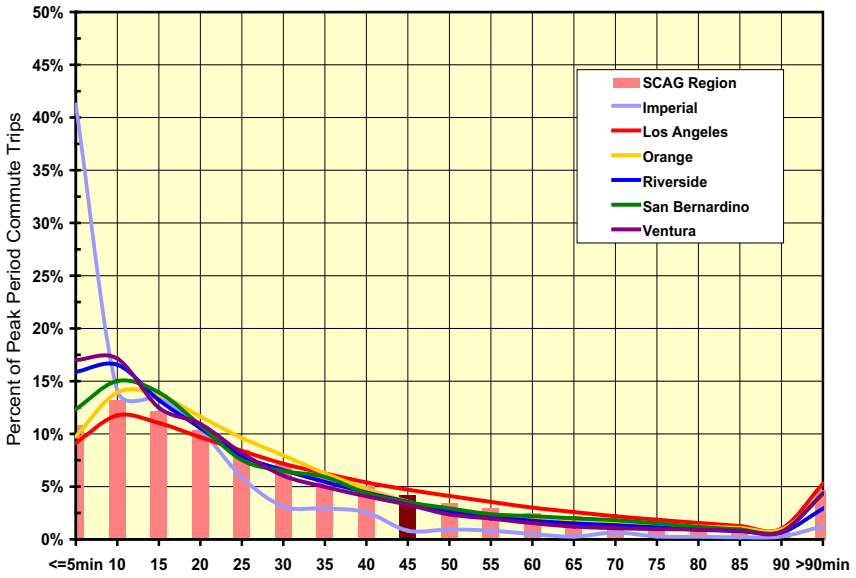


Figure 2 shows a non-cumulative distribution of the region's accessibility. More home-based work trips take ten minutes than any other travel time, except in Imperial County, where most trips take five minutes or less. At the same time, about 5 percent of all trips made in all counties except Riverside and Imperial last over 90 minutes.

FIGURE 2 BASE YEAR 2003 AUTO HOME-BASED WORK TRIP DISTRIBUTION | PM PEAK



PRODUCTIVITY

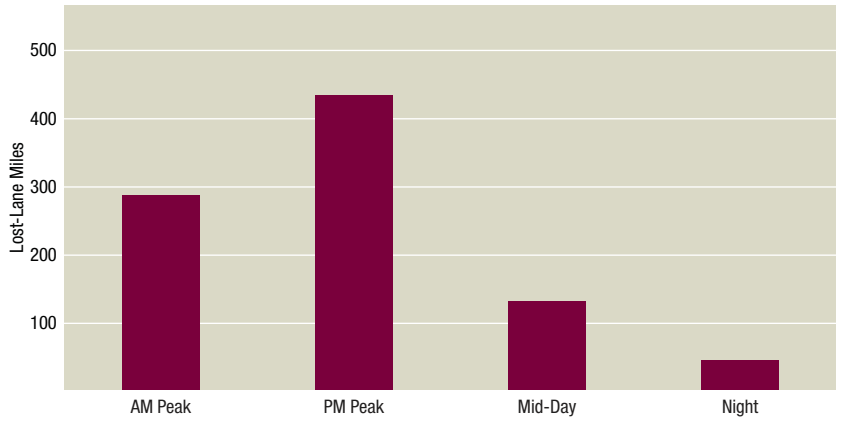
Roadways are built to provide traffic capacity to vehicles. For instance, freeways are generally built to provide a capacity of between 1,600 and 2,000 vehicles per hour per lane. When a segment of the freeway provides this "design" capacity, it is considered productive. However, the roadway system loses its productivity when it is unable to provide the capacity that it was designed to serve. This occurs at locations commonly referred to by transportation planners and engineers as bottlenecks and the queues building up behind these bottlenecks (e.g., at freeway-to-freeway interchanges). The resulting productivity losses of the system occur generally during peak demand periods and are caused by merges, weaves, lane drops, stalls, accidents, and other factors. So in effect, when demand is highest, system productivity actually decreases. Many freeway segments in the SCAG Region experience productivity losses and end up serving between 1,000 and 1,500 vehicles per hour per

lane instead of the almost 2,000 vehicles per hour per lane for which they were designed.

When these productivity losses are aggregated, they can be presented in terms of "Lost Lane Miles," which reflect the equivalent capacity subtracted from the roadway system. Figure 3 presents the results of an analysis to estimate the lost productivity in the SCAG Region based on actual traffic data from the region's freeway system during the four major time periods of the day: AM Peak, PM Peak, Mid-Day, and Night.

This "lost" capacity in the AM Peak Period, attributable to a large extent to non-recurring incidents such as accidents, weather conditions, stalled vehicles, etc. could have the effect of the loss of approximately 286 lane miles of freeway capacity when it is needed the most. The cost of physically adding this lost capacity by widening existing facilities would exceed $4 billion.

FIGURE 3 PRODUCTIVITY RESULTS BY TIME PERIOD

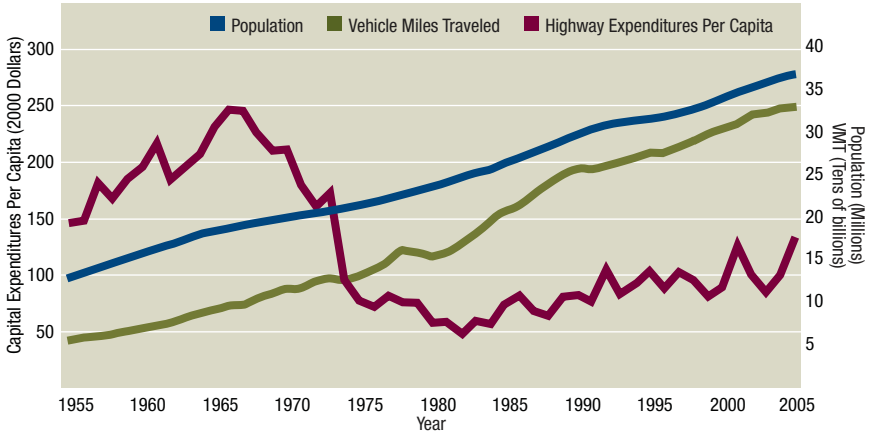


Source: Freeway Performance Measurement System (PeMS)

SUPPLY NOT KEEPING UP WITH DEMAND

As mentioned previously, people are moving further away from established urban areas, at least partly because of housing costs. This creates incremental demand for travel. The size of the roadway system, however, has not kept pace with population and transportation demand. Figure 4 illustrates this problem. The figure shows that while California's population and total vehicle miles traveled have more than doubled since 1970, expenditures on this vital system have decreased significantly beginning in the early 1970s and have still not reached the level of investments made during the 1960s. Once the preservation and operations costs are subtracted from these expenditures and the high construction inflation is accounted for, it is easy to understand why the supply of roadways did not keep up with the demand growth for over three decades.

FIGURE 4 CALIFORNIA POPULATION, TRAVEL AND HIGHWAY EXPENDITURE TRENDS*



* Includes expenditures for local assistance and state highway capital outlay. Office of Transportation Economics/DOTP 9/2006

Source: California Department of Transportation

Note that these trends were not altogether unintentional. In fact, starting in 1980, a major shift occurred away from building roadways and into transit projects and services. This trend was planned and executed deliberately and understandably.

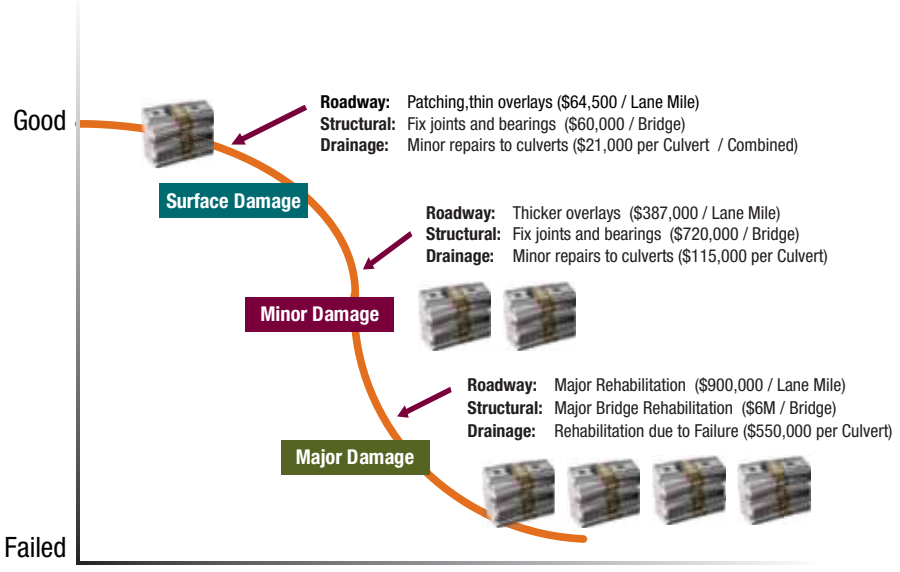
AGING INFRASTRUCTURE

The need to preserve our transportation assets adequately was brought to the nation's attention after the Minnesota I-35W bridge collapse during the summer of 2007. We must recognize that our roadway network and transit systems developed over the past decades are aging. These regional assets represent hundreds of billions of dollars of investments that must be protected in order to serve us and future generations. Without these assets, or even a portion of these assets, the region's mobility would be significantly compromised.

Unfortunately, our region's roadways, especially the State Highway System that is owned and operated by Caltrans, have not been maintained adequately. Caltrans reports that 28 percent of its pavement requires rehabilitation (based on 2005 statistics). Regional arterial studies have concluded similar needs.

Deferred maintenance leads to higher costs, as shown in Figure 5. Whereas pavement surface damage requires an investment of $64,000 per lane mile to bring it to a state of good repair, the costs escalate significantly if these investments are not secured in a timely manner. In fact, the costs for minor damage repair escalate more than fivefold to $387,000, and the costs for major damage repair escalate to an astronomical $900,000 per lane mile.

FIGURE 5 PRESERVATION COST-EFFECTIVENESS



The Baseline 2035 System

SYSTEM DESCRIPTION

SCAG has assessed the future transportation system performance under the assumption that the Baseline projects committed in the Regional Transportation Improvement Program (RTIP) will be completed. Examples of major Baseline projects include:

- The Brawley Bypass in Imperial County
- HOV lanes on:
  - I-405 (from I-105 to US-101)
  - I-5 (from SR-134 to SR-118)
  - I-10 (from I-605 to SR-57/I-210)

- SR-60 (from I-605 to SR-57)
- SR-14 (from Escondido Cyn to Ave P-8) in Los Angeles County

- Mixed flow and HOV lanes on:
  - I-5 (from SR-91 to the LA County Line) in Orange County
  - I-215 (from I-10 to I-210) and completion of the I-210 freeway in San Bernardino County
- HOV lanes on:
  - I-215 (from SR-60/SR-91/I-215 to SR-60/I-215 east junction)
  - SR-60 (from I-15 to Valley Way and from I-215 to Redlands Blvd) in Riverside County
- Mixed flow lanes on:
  - SR-23 (from SR-118 to US-101)
- Improvements to the US-101/SR-23 interchange in Ventura County.

Table 6 provides a summary of the number of miles added by Baseline improvements. The definition of the Baseline as well as a complete list of projects is discussed in further detail in the RTP Project List Report.

TABLE 6 BASELINE 2035 NETWORK SUMMARY AND CHANGE VS. BASE YEAR 2003 (TOTAL ALL FACILITIES)

County	Centerline Miles	Change	Lane Miles	Change
Imperial	1,710	+12	3,861	+117
Los Angeles	7,577	+91	26,651	+379
Orange	2,033	+31	8,769	+325
Riverside	3,297	+43	9,645	+301
San Bernardino	5,388	+84	14,615	+621
Ventura	977	+4	3,039	+68
Region	**20,982**	**+265**	**66,581**	**+1,809**

Note: Lane miles shown are for the AM Peak Period.

DECLINING MOBILITY

Despite the Baseline improvements made through 2035, the roadway system performance is still projected to deteriorate. Per capita data in this section is based on the projected Baseline AVO for each county and the region as a whole (Table 7).

TABLE 7 BASELINE 2035 AVERAGE VEHICLE OCCUPANCY

County	AVO
Imperial	1.39
Los Angeles	1.48
Orange	1.41
Riverside	1.48
San Bernardino	1.49
Ventura	1.41
Region	**1.46**

As seen in Table 8, daily VMT will increase regionwide by 155 million miles from the Base Year 2003 scenario, led by Los Angeles, Riverside, and San Bernardino Counties, which all have similar increases. Total delay will double while delay per capita increases by about a third to nearly 30 minutes. On a per capita basis, those in Riverside and San Bernardino Counties will experience the greatest delay increases by far; Riverside County's 29-minute increase is greater than the overall daily per capita delay for most other counties, and is accompanied by a speed decrease of 15 mph, the greatest in the region. Still, those in Los Angeles County will continue to experience the lowest average travel speeds (25.5 mph), followed closely by travelers in Orange County.

TABLE 8 BASELINE 2035 DAILY VMT, VHT, DELAY, AND SPEED BY COUNTY AND CHANGE VS. BASE YEAR 2003

County	VMT	Change	VHT	Change	Delay (hours)	Change (hours)	Delay per capita (minutes)	Change (minutes)	Speed (mph)	Change (mph)
Imperial	11,624,000	+6,682,000	268,000	+164,000	43,000	+36,000	11.2	+7.2	43.4	-4.1
Los Angeles	259,852,000	+43,277,000	10,193,000	+2,295,000	3,934,000	+1,261,000	28.3	+4.9	25.5	-1.9
Orange	85,575,000	+15,329,000	3,097,000	+833,000	1,126,000	+484,000	26.1	+8.0	27.6	-3.4
Riverside	85,069,000	+41,250,000	3,427,000	+2,328,000	1,607,000	+1,402,000	39.7	+29.2	24.8	-15.0
San Bernardino	97,871,000	+43,643,000	3,202,000	+1,822,000	1,180,000	+916,000	33.6	+20.9	30.6	-8.7
Ventura	23,336,000	+4,717,000	767,000	+245,000	249,000	+135,000	20.8	+8.7	30.4	-5.2
Region	**563,327,000**	**+154,898,000**	**20,955,000**	**+7,687,000**	**8,138,000**	**+4,234,000**	**29.7**	**+10.4**	**26.9**	-3.9

Numbers may not add due to rounding.

Table 9 shows a regionwide increase in travel time for the average home-based work trip in the AM Peak Period although the average travel distance actually decreases. Los Angeles and Riverside Counties contribute the greatest to the increase in travel time, while all counties except LA County show a decrease in average travel distance.

TABLE 9 BASELINE 2035 HOME-BASED WORK TRIP AVERAGE STATISTICS AND CHANGE VS. BASE YEAR 2003 I AM PEAK

County	Time (minutes)	Change (minutes)	Distance (miles)	Change (miles)
Imperial	12.87	-0.70	7.53	-1.86
Los Angeles	32.29	+4.74	13.29	+0.81
Orange	24.35	+0.43	11.25	-0.65
Riverside	37.58	+4.99	14.78	-3.43
San Bernardino	32.83	-2.05	14.55	-5.43
Ventura	22.53	-3.36	11.62	-2.87
Region	**30.95**	**+3.12**	**13.13**	**-0.55**

Note: Numbers may not add due to rounding.

By 2035, there will be a significant decrease in the daily speeds for each facility type, despite the completion of Baseline improvements. HOV speeds are now greater than freeway speeds, but a quick look at both speeds shows that both systems are inadequate in the Baseline scenario. Furthermore, there will be increases in VMT, VHT, and delay for every type of roadway.

TABLE 10 BASELINE 2035 DAILY VMT, VHT, DELAY, AND SPEED BY FACILITY TYPE AND CHANGE VS. BASE YEAR 2003

Facility Type*	VMT	Change	VHT	Change	Delay (hours)	Change (hours)	Speed (mph)	Change (mph)
Freeway (MF)*	248,466,000	+52,100,000	7,098,000	+2,177,000	3,305,000	+1,397,000	35.0	-4.9
Freeway (HOV)*	22,485,000	+12,988,000	628,000	+385,000	276,000	+182,000	35.8	-3.4
Expressway	5,880,000	+3,755,000	157,000	+110,000	63,000	+51,000	37.5	-8.2
Principal Arterial	108,937,000	+23,648,000	4,584,000	+1,324,000	1,675,000	+767,000	23.8	-2.4
Minor Arterial	84,934,000	+26,850,000	3,352,000	+1,179,000	913,000	+485,000	25.3	-1.4
Major Collector	27,428,000	+15,742,000	1,353,000	+941,000	589,000	+516,000	20.3	-8.1
Minor Collector	2,399,000	+1,310,000	104,000	+60,000	27,000	+21,000	23.0	-1.7
Ramps	15,927,000	+2,664,000	1,805,000	+898,000	1,290,000	+816,000	8.8	-5.8
Centroid Connector*	46,872,000	+15,841,000	1,875,000	+612,000	N/A	N/A	N/A	N/A
Region	**563,328,000**	**+154,898,000**	**20,955,000**	**+7,687,000**	**8,138,000**	**+4,234,000**	**26.9**	-3.9

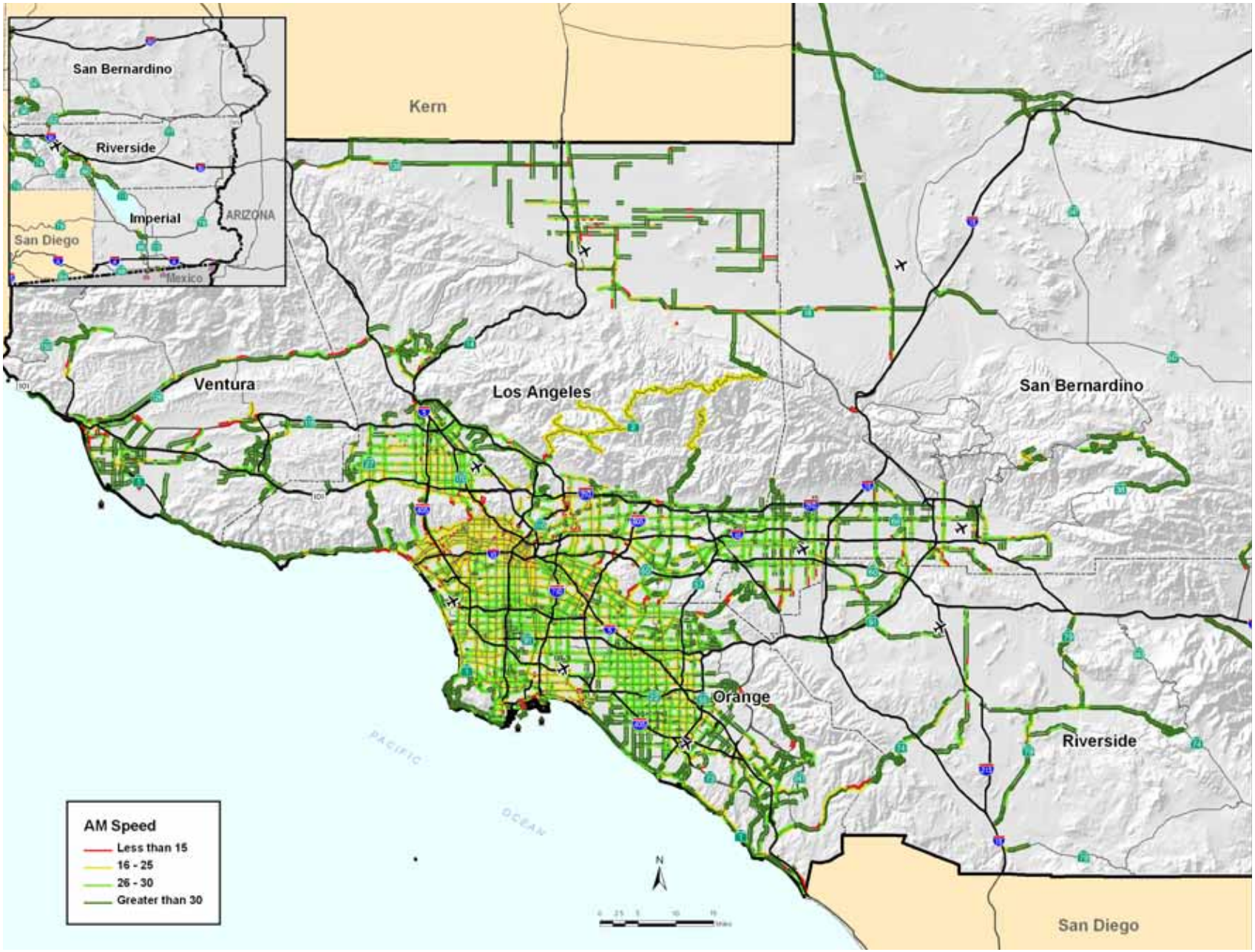
* Notes: MF for mixed flow or general purpose lanes, as opposed to HOV, high occupancy vehicle or carpool lanes. Centroid connectors are intra-zonal links used in regional travel demand models such as SCAG's to allocate trips from zone centroids to the highway network.
Numbers may not add due to rounding.

The following maps show the projected Baseline average speeds of the freeway and arterial system during the AM and PM Peaks.

EXHIBIT 8 BASELINE 2035 FREEWAY SPEED I AM PEAK

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

EXHIBIT 9 BASELINE 2035 ARTERIAL SPEED | AM PEAK

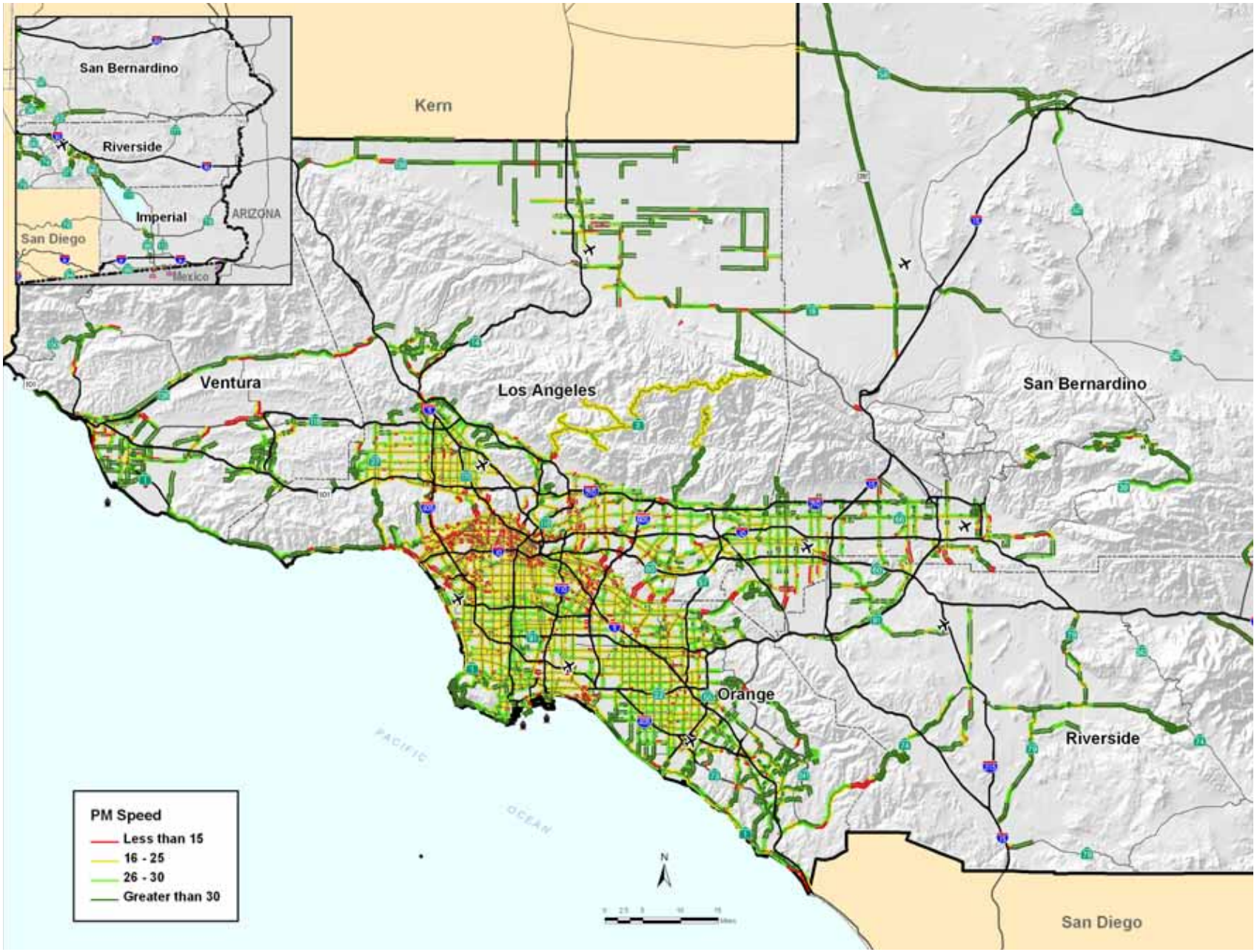


Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

EXHIBIT 10 BASELINE 2035 FREEWAY SPEED | PM PEAK

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

EXHIBIT 11 BASELINE 2035 ARTERIAL SPEED | PM PEAK



Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatla

The following maps show the projected decline in speed between the Base Year 2003 and Baseline 2035 scenarios on our highway system. Note the severe deterioration of speeds, especially during the PM Peak Period.

EXHIBIT 12 BASE YEAR 2003 VS. BASELINE 2035 SPEED CHANGES AM PEAK

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

EXHIBIT 13 BASE YEAR 2003 VS. BASELINE 2035 SPEED CHANGES I PM PEAK

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

DECLINING ACCESSIBILITY

As Figures 6 and 7 show, regionwide accessibility seems to remain mostly unaffected by the Baseline improvements.

FIGURE 6 BASELINE 2035 AUTO HOME-BASED WORK TRIP CUMULATIVE DISTRIBUTION I PM PEAK

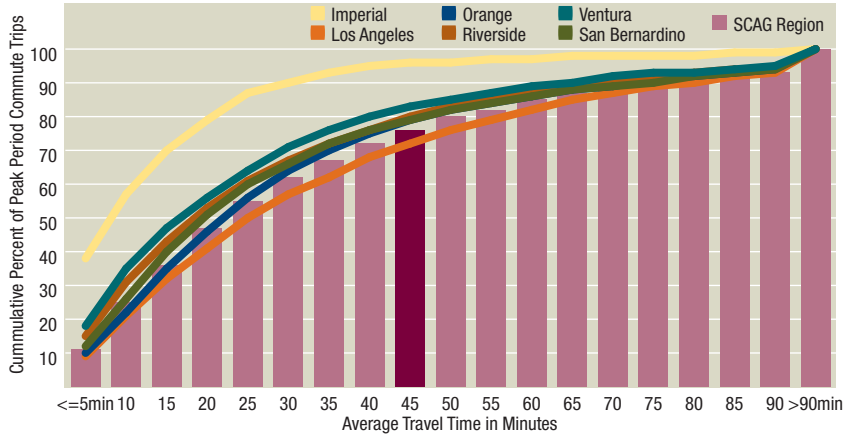
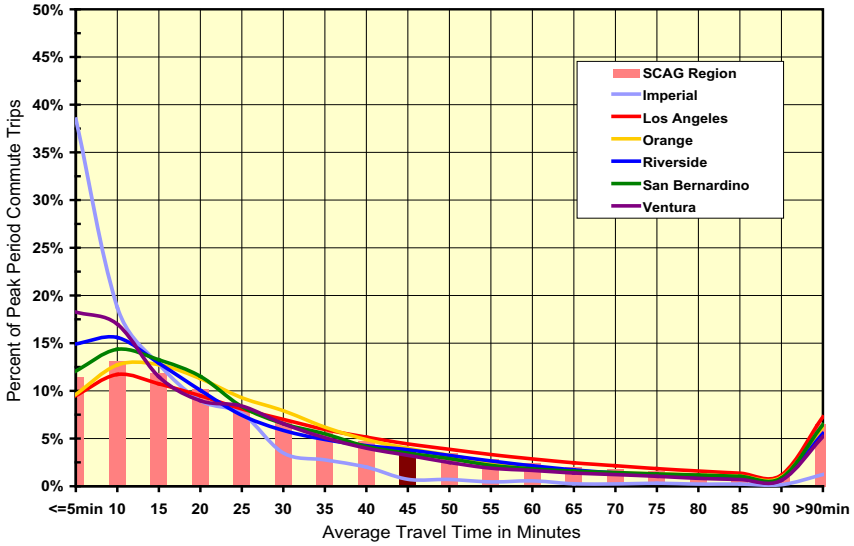


FIGURE 7 BASELINE 2035 AUTO HOME-BASED WORK TRIP DISTRIBUTION PM PEAK



The Plan 2035 System

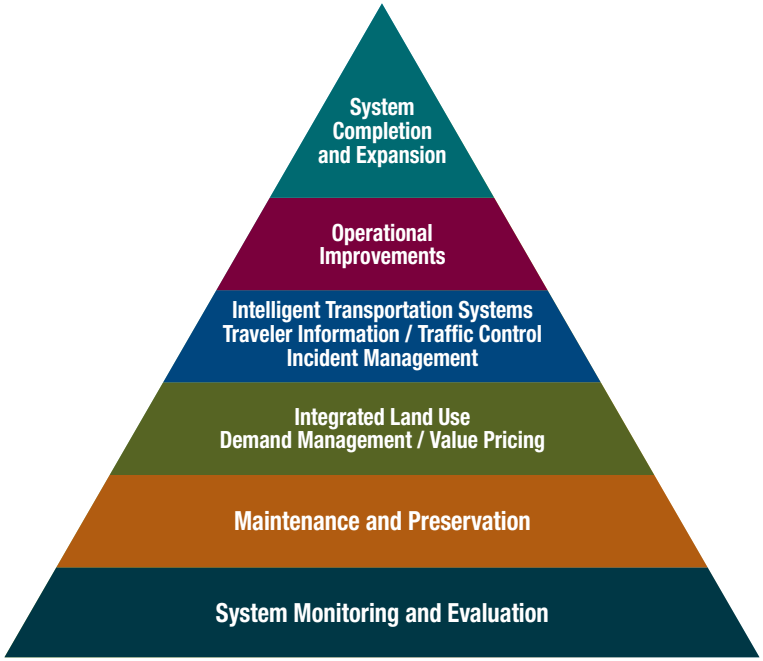
MANAGING OUR TRANSPORTATION SYSTEM WISELY

The region recognizes that maintaining and/or improving mobility will no longer depend solely on its ability to expand its multimodal transportation system. Instead, an integrated approach--based on the statewide GoCalifornia initiative--is needed to maximize mobility. Depicted in Figure 8, the five elements of the pyramid represent integrated strategies that work cooperatively to maximize mobility. The pyramid depicts the idea that transportation investments would have more impact if they are prioritized strategically as suggested. System monitoring and evaluation are the basic foundation upon which the other strategies are built. System expansion and completion will provide the desired mobility benefits to the extent that investments in, and implementation of, the strategies below it achieve progress. An improvement in mobility will occur when strategic investments in each of the elements are

coordinated between the elements. The mobility pyramid provides the framework for the discussion of the RTP's transportation investment strategies.

Complementing our transportation investment philosophy is the performance measures approach utilized in developing this Plan. While the pyramid approach ensures that our funding priorities are clear and rational, performance measures ensure that the best performing projects are included in the Plan for funding.

FIGURE 8 MOBILITY PYRAMID



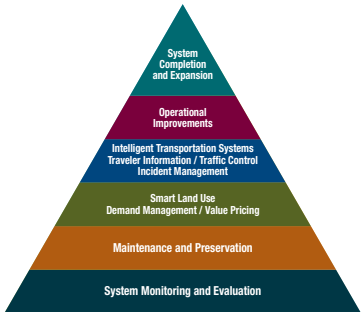
SYSTEM MONITORING AND EVALUATION

In order to be effective system managers, we must have an in-depth understanding of how our system performs and why it performs that way. For instance, we all know congestion is a problem in the region. But we must also be able to quantify congestion and understand its various causes. Only by understanding these causes can we identify the optimal mix of strategies and projects that yield the highest returns on the region's investments. The same holds true for transit, goods movement, and aviation.

The base of the mobility pyramid, entitled "System Monitoring and Evaluation," is the foundation of sound system management. It calls for the use of performance measures to track and monitor the progress of the transportation system so that the region can make informed decisions regarding transportation investments. Transportation professionals and decision-makers have recently committed to improving the region's ability to properly fund the investments needed to comprehensively monitor and evaluate system performance. These investments include detection, closed circuit television systems, bus global positioning systems, and automatic ridership counting systems. Although funding is modest for these activities, they lead to more informed decisions. Further discussion of system monitoring is contained in Chapter VI.

As we move forward, our focus will evolve into a comprehensive system management approach, which aims to protect, maximize the productivity of, and strategically expand our transportation system.

PROTECTING OUR REGION'S TRANSPORTATION ASSETS



MAINTENANCE AND PRESERVATION

Over the decades, the region has invested hundreds of billions of dollars in our multimodal transportation system. The system is now aging and requires immediate attention. Preserving our assets is a critical priority of this RTP.

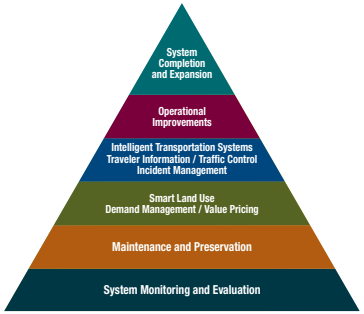
In a sense, the region must make up for past funding shortfalls. As discussed in Chapter II, roadway expenditures have not kept up with demand over the last three decades. As a result, we have not properly funded roadway preservation needs. The recent passage of the Infrastructure Bond injected much needed funding to highway preservation. However, SCAG estimates that an additional $30 billion is required to bring the system into a comprehensive state of adequate repair.

SCAG also estimates that an additional $10 billion is required for arterials and transit preservation needs. The subsequent shortfall for highway, arterial, and transit preservation needs totals $40 billion. Deferring maintenance only increases this shortfall over time.

Recognizing that every dollar expended today to address this shortfall would save much more in the future, the region committed $8 billion of new funding to preservation, thereby addressing at least 20 percent of preservation needs. As more funding becomes available, additional commitments will be made. These additional investments will ensure that over the next thirty years, our infrastructure will be in a better condition than it is today. This also means that user costs (e.g., vehicle maintenance costs) will decline compared to today.

SCAG will continue to work with its stakeholders, particularly county transportation commissions and Caltrans, to prioritize funding for preservation and maintenance.

Strategies found in the next several layers of the pyramid prior to System Completion and Expansion are discussed in other 2008 RTP Supplemental Reports.



SYSTEM COMPLETION AND EXPANSION

Major categories of highway improvements included in the 2008 RTP are High Occupancy Vehicle (HOV) lanes and connectors, mixed flow (or general purpose) lanes, toll facilities and High Occupancy Toll (HOT) lanes, and strategic arterial improvements.

A significant number of system expansion projects have already been committed through SCAG's RTIP for the highway network. These priority projects close critical gaps in the system, relieve significant bottlenecks, and address inter-county travel needs. Recent extraordinary increases in the costs of concrete and steel have resulted in substantial project cost increases and forced implementing agencies to piece together enough additional funding to deliver the improvements. Voter approval of Proposition 1B in November 2006 brought much-needed revenue to the table, through programs such as the Corridor Mobility Improvement Account (CMIA). Much of the additional

improvements recommended in the 2008 RTP, beyond those projects that are already in the delivery pipeline, have been committed through local sales tax revenues such as those recently approved by voters in Orange, Riverside, and San Bernardino Counties. The proposed projects and strategies are based on a performance framework established for the 2004 RTP and updated for the 2008 RTP.

Recently completed Regionally Significant Transportation Investment Studies (RSTIS) have helped to identify additional corridor improvements needed in the SCAG Region. These corridor projects provide capacity enhancements and mobility improvements to address rapidly growing inter-county travel, often on already congested facilities with few alternatives. These projects have been incorporated into the RTP, and they will depend in part on financial contributions from the private sector for their construction, operation, and maintenance.

Table 11 provides a summary of the number of miles added by Plan improvements and the number of miles added over Baseline improvements.

TABLE 11 PLAN 2035 NETWORK SUMMARY AND CHANGE VS. BASELINE 2035 (TOTAL ALL FACILITIES)

County	Centerline Miles	Change	Lane Miles	Change
Imperial	1,716	+7	3,956	+95
Los Angeles	7,670	+93	27,276	+625
Orange	2,063	+30	9,016	+247
Riverside	3,569	+272	12,016	+2,371
San Bernardino	5,606	+218	16,467	+1,852
Ventura	985	+8	3,134	+95
Region	**21,609**	**+627**	**71,866**	**+5,285**

Note: Lane miles shown are for the AM Peak Period.

HOV GAP CLOSURES AND CONNECTORS

Southern California has invested heavily in HOV lanes, producing one of the nation's most comprehensive HOV networks and highest rideshare rates. The HOV projects proposed in the RTP focus on strategic gap closures and freeway-to-freeway direct HOV connectors to complete the system. The HOV lane network could eventually serve as the backbone of a regional HOT lane or managed lane system. Determining the feasibility of such a regional system will require further study and discussion before inclusion in a future RTP update.

In 2007, the new SR-22 HOV lanes in Orange County opened as the first continuous-access HOV lanes in Southern California. Monitoring and evaluation of these HOV lanes will conclude in 2008 and transportation officials will decide whether the continuous access will be made permanent. On SR-60 in Moreno Valley in Riverside County, Caltrans has proposed a temporary conversion of the existing HOV lanes to part-time operation. During the off-peak periods, solo drivers will be allowed to access the HOV lanes. The HOV lanes will revert back to full-time operations after three years.

The HOV lane system is a regional network and operations should be coordinated across jurisdictional boundaries to optimize performance and minimize confusion. SCAG supports further study and evaluation of these proposed operational changes to the HOV lane system to fully understand the mobility, safety, and air quality impacts, as well as any implications for a potential regional HOT lane system.

Projects in the Pipeline

The RTIP includes HOV gap closures and connectors as shown in Exhibit 14.

- I-405 in the Westside of Los Angeles
- SR-91 in Riverside
- I-5 and SR-14 connecting the San Fernando Valley to North Los Angeles County
- I-5 and I-605 connecting Los Angeles and Orange Counties
- I-10 and SR-60 connecting Los Angeles and San Bernardino Counties
- SR-60 and I-215 connecting Riverside and San Bernardino Counties
- US-101 connecting Ventura and Santa Barbara Counties

- HOV connectors at I-5/SR-14, I-5/SR-170, SR-57/SR-60, SR-22/I-405, I-405/I-605, and SR-60/I-215

Additional Investments

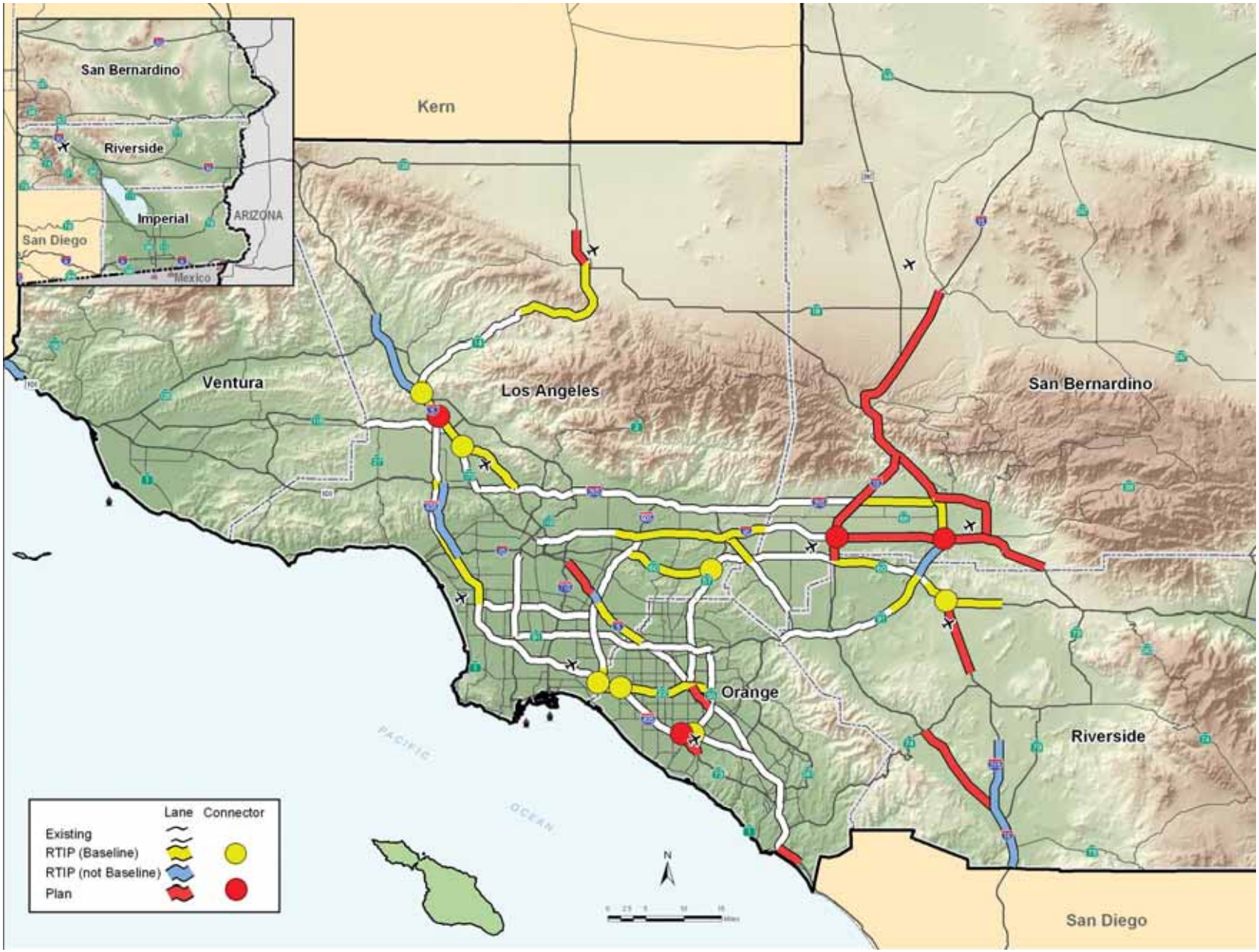
The 2008 RTP calls for additional investments to extend the HOV network and construct additional connectors, as shown in Table 12 and in Exhibit 14. It invests close to $8 billion for HOV improvements through 2035. These gap closures and connectors help users to maximize the overall system performance by minimizing weaving conflicts and maintaining travel speeds.

TABLE 12 HOV AND HOV CONNECTOR PROJECTS

Project	County	Implementation Schedule*
I-5 (SR-19 to I-710)	Los Angeles	2020
SR-14 (Ave P-8 to Ave L)	Los Angeles	2020
I-5 / I-405 connector	Los Angeles	2030
I-5 (Avenida Pico to Coast Hwy)	Orange	2020
I-5 (SR-55 to SR-57)	Orange	2020
SR-73 (I-405 to MacArthur)	Orange	2030
SR-73 / I-405 connector	Orange	2030
I-15 (I-215 to SR-74)	Riverside	2020
I-215 (Nuevo to Box Springs)	Riverside	2020
I-10 (Haven to Ford)	San Bernardino	2020
I-10 (Ford to Riverside County)	San Bernardino	2030
I-10 / I-15 connector	San Bernardino	2030
I-10 / I-215 connector	San Bernardino	2030
I-15 (Riverside County to I-215)	San Bernardino	2030
I-15 (I-215 to SR-18)	San Bernardino	2020
SR-210 (I-215 to I-10)	San Bernardino	2020
I-215 (SR-210 to I-15)	San Bernardino	2030

* Represents the Plan network year for which a project was analyzed for the RTP modeling and regional emissions analysis

EXHIBIT 14 HOV GAP CLOSURES AND CONNECTORS



Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

MIXED FLOW

Since mixed flow lanes carry more traffic than any other component of our transportation system, mixed flow capacity enhancements are necessary to address traffic bottlenecks and relieve congestion on heavily traveled corridors. This is especially true in areas outside of the urban core where transit service and the HOV network are not fully developed. The majority of mixed flow projects in the pipeline and proposed in the 2008 RTP are located outside of Los Angeles County.

Projects in the Pipeline

The RTIP contains mixed flow lane additions on the following routes (see Exhibit 15).

- Brawley Bypass in Imperial County
- I-5, I-405, and SR-57 connecting Los Angeles and Orange Counties
- SR-91 connecting Orange and Riverside Counties
- CETAP Mid-County Parkway in Riverside County
- SR-60 and I-215 connecting Riverside and San Bernardino Counties
- I-15 and I-215 connecting Riverside and San Diego Counties
- US-395 in northern San Bernardino County
- Completion of the 210 freeway in San Bernardino County
- SR-23, SR-118, and US-101 in Ventura County

Additional Investments

The 2008 RTP invests $25.1 billion through 2035 for mixed flow improvements and interchange ramps. Major mixed flow improvements are listed in Table 13 and shown in Exhibit 15.

TABLE 13 MIXED FLOW HIGHWAY PROJECTS

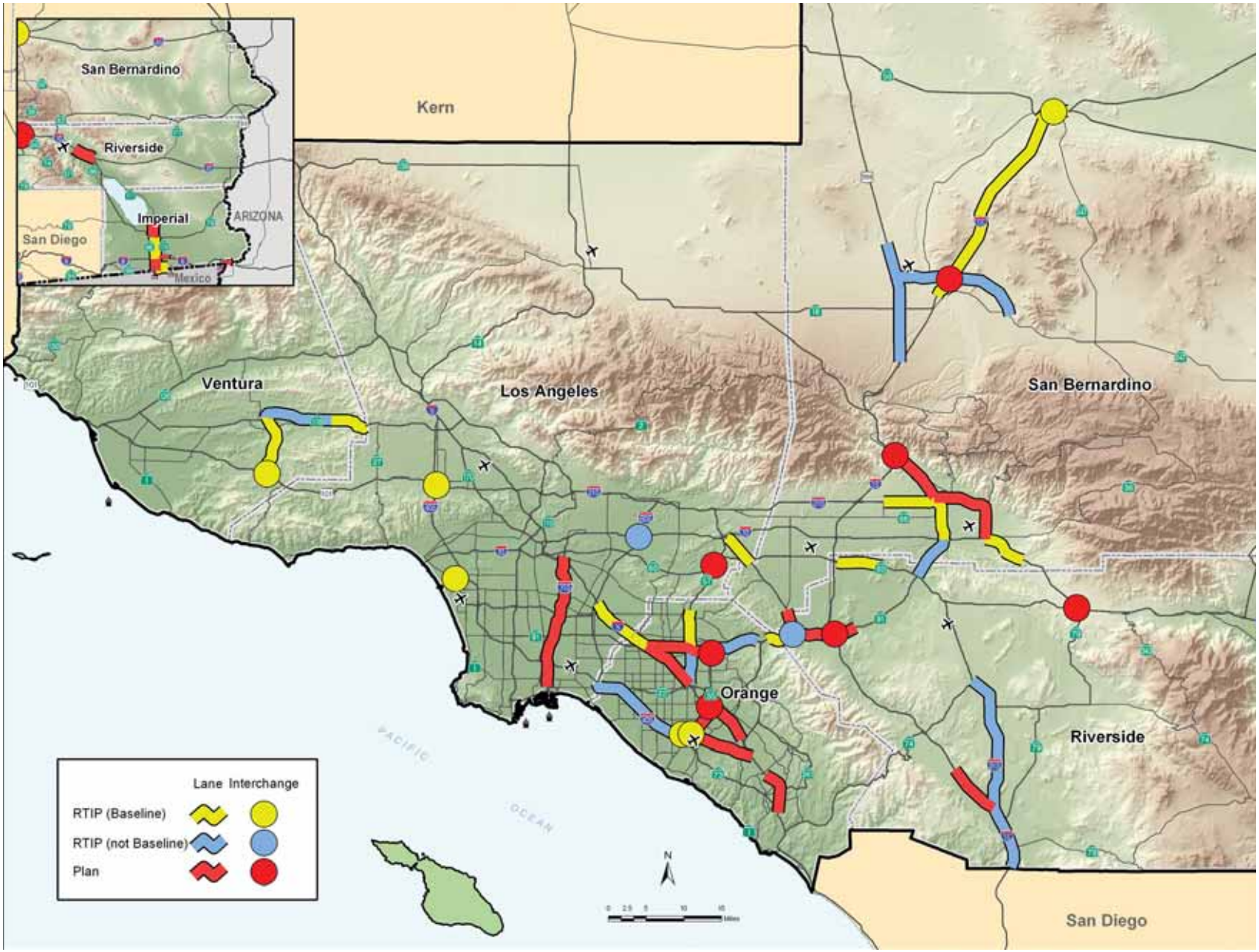
Project	County	Implementation Schedule*
SR-111 (SR-98 to I-8)	Imperial	2020
I-710 (Ports to SR-60)	Los Angeles	2020
I-5 (SR-73 to El Toro)	Orange	2030
I-5 (SR-133 to SR-55)	Orange	2030
I-5 (SR-57 to SR-91)	Orange	2030
SR-55 (I-405 to I-5)	Orange	2020
SR-55 (I-5 to SR-22)	Orange	2030
SR-91 westbound (SR-57 to I-5)	Orange	2020
SR-91 eastbound (SR-57 to SR-55)	Orange	2030
SR-91 westbound (SR-241 to Gypsum Cyn)	Orange	2020
I-405 (I-5 to SR-55)	Orange	2030
I-10 (Monterey to Dillon)	Riverside	2030
I-15 (Bundy Cyn to I-215)	Riverside	2014
SR-71 (SR-91 to San Bernardino County)	Riverside	2035
SR-91 (Pierce to Orange County)	Riverside	2020
SR-210 (I-215 to I-10)	San Bernardino	2020
I-215 (SR-30 to I-15)	San Bernardino	2030

* Represents the Plan network year for which a project was analyzed for the RTP modeling and regional emissions analysis

TOLL AND HIGH OCCUPANCY TOLL (HOT) LANE CORRIDORS AND FACILITIES

The 2008 RTP proposes to expand upon the existing HOT lane and toll road system in Orange County to address the congested commuter corridor between housing-rich Riverside County and job-rich Orange County. Additionally, improvements to several major corridors elsewhere in the region are proposed to be financed by tolls.

EXHIBIT 15 MIXED FLOW LANE ADDITIONS



Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

Projects in the Pipeline

The RTIP includes lane additions to each of the toll roads in Orange County and the construction of the Foothill South corridor connecting to I-5 in San Diego County (see Exhibit 16).

- SR-73 – San Joaquin Hills Corridor
- SR-133/SR-241/SR-261 – Eastern Transportation Corridor
- SR-241 – Foothill Transportation Corridor North
- SR-241 – Foothill Transportation Corridor South (extension to I-5)

Additional Investments

The recommendations from several recent major RSTIS efforts examining inter-county travel have been considered in the development of the 2008 RTP. First, the Riverside County to Orange County study completed in 2006 identifies a comprehensive set of improvements that includes extending the SR-91 Express Lanes into Riverside County and providing direct connections to and from the Express Lanes. Additionally, the study identifies two major new facilities, one parallel to the SR-91 and one on a new alignment further south. Secondly, a North Los Angeles County study completed in 2004 recommended a new east-west facility called the High Desert Corridor to connect the high-growth areas of Lancaster/Palmdale and Victor Valley. While the RSTIS provides input to the RTP on a locally preferred strategy, SCAG recognizes and respects the local processes that must continue to solidify community consensus and further refine each project.

In 2006, MTA completed a technical feasibility study examining the potential for constructing the I-710 Gap Closure between the I-10 and I-210 freeways as a tunnel. SCAG has further assessed the potential for the Gap Closure to be financed in part through a public-private partnership. A number of tolling structures were considered in the financial analyses, including both flat rate and variable toll rate structures. SCAG anticipates that structuring financing alternatives with lower-cost Private Activity Bonds (PABs) and 30- to 50-year term bonds could help to improve shareholders' internal rate of return.

Additionally, SCAG's current evaluations to date indicate that the project is feasible from a construction standpoint. Two 46-foot inner diameter tunnels could provide two levels of lanes. The upper level could include three lanes for passenger vehicles; and two lanes in the middle level could accommodate truck and high occupancy vehicles. The I-710 Gap Closure is estimated to cost $4.6 billion.

The 2008 RTP invests $40 billion for toll and HOT lane facilities. These additional investments are listed in Table 14 and shown in Exhibit 16.

TABLE 14 HOT LANES AND TOLL FACILITIES

Project	County	Implementation Schedule*
I-710 Tunnel Gap Closure (710/Valley Blvd to California Blvd/Pasadena Ave)	Los Angeles	2020
High Desert Corridor (I-5 to US-395)	Los Angeles / San Bernardino	2030
SR-91 / SR-241 HOT connectors	Orange	2020
CETAP Riverside County to Orange County (Corridor A parallel to SR-91 from I-15 to SR-241; Corridor B from I-15/Mid-County Pkwy to SR-133/SR-241)	Orange / Riverside	2035
SR-91 Express Lanes (extend east to I-15)	Riverside	2020
I-15 HOT Lanes (SR-74 to San Bernardino County)	Riverside	2020
SR-91 / I-15 HOT connectors	Riverside	2020

* Represents the Plan network year for which a project was analyzed for the RTP modeling and regional emissions analysis

ARTERIAL IMPROVEMENTS

Arterials account for over 80 percent of the total road network and carry a high percentage of total traffic. In many cases arterials serve as alternate parallel routes to congested freeway corridors. In mature urban areas there is often little right-of-way available for capacity enhancements. In the fast-growing suburban and exurban parts of the region, local jurisdictions ensure that roadway capacity improvements keep pace with new developments by implementing mitigation fees. In all parts of the region, operational and technological improvements have the potential to maximize system productivity in a more cost-effective way than simply adding capacity. Such strategic improvements include spot widening, signal prioritization, driveway consolidation and relocation, and grade separations at high-volume intersections. The 2008 RTP invests approximately $17.6 billion for arterial system improvements as shown in Table 15.

TABLE 15 ARTERIAL INVESTMENT SUMMARY

County	Investment (in billions, nominal dollars through 2035)
Imperial	$1.0
Los Angeles	$2.3
Orange	$2.6
Riverside	$6.1
San Bernardino	$4.8
Ventura	$0.9
Regional Total	**$17.6**

Note: Numbers may not add due to rounding

SOUNDWALLS

Soundwalls are a regional issue associated primarily with freeway improvements. Federal and state laws require construction of noise barriers along freeways under the Community Noise Abatement Program and as part of new freeway construction, and widening or capacity enhancement projects on existing freeways. Accordingly, all new freeway projects and freeway widening projects will include soundwall costs.

IMPROVED MOBILITY

Although the Plan improvements are still unable to improve the region's mobility over the Base Year scenario, it produces benefits when compared to the Baseline scenario. Per capita data in this section is based on the projected Plan AVO for each county and the region as a whole (Table 16).

TABLE 16 PLAN 2035 AVERAGE VEHICLE OCCUPANCY

County	AVO
Imperial	1.39
Los Angeles	1.48
Orange	1.41
Riverside	1.49
San Bernardino	1.50
Ventura	1.42
Region	**1.47**

EXHIBIT 16 HOT LANES AND TOLL FACILITIES

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatla

As seen in Table 17, the Plan 2035 scenario will actually reduce VMT by about 15 million miles over the Baseline 2035 scenario, with each county except Orange and Riverside Counties experiencing reductions. Daily VHT will decrease in every county, and so will delay. With the exception of Ventura County, in which speed remains virtually the same as the Baseline scenario, speed will increase in every county, especially in Riverside and San Bernardino Counties. Delay per capita will also decrease significantly in these counties when compared to the Baseline scenario, reflecting the effectiveness of Plan improvements to offset a portion of large per capita delay increases in the Inland Empire between the Base Year and Baseline scenarios.

Figure 9 provides a comparison of expected increases in average daily delay per capita between 2003 and 2035, as well as the delay decreases that the Plan 2035 improvements will bring over the Baseline 2035 improvements.

FIGURE 9 BASE YEAR 2003 VS. BASELINE 2035 VS. PLAN 2035 CHANGE IN AVERAGE DAILY DELAY PER CAPITA

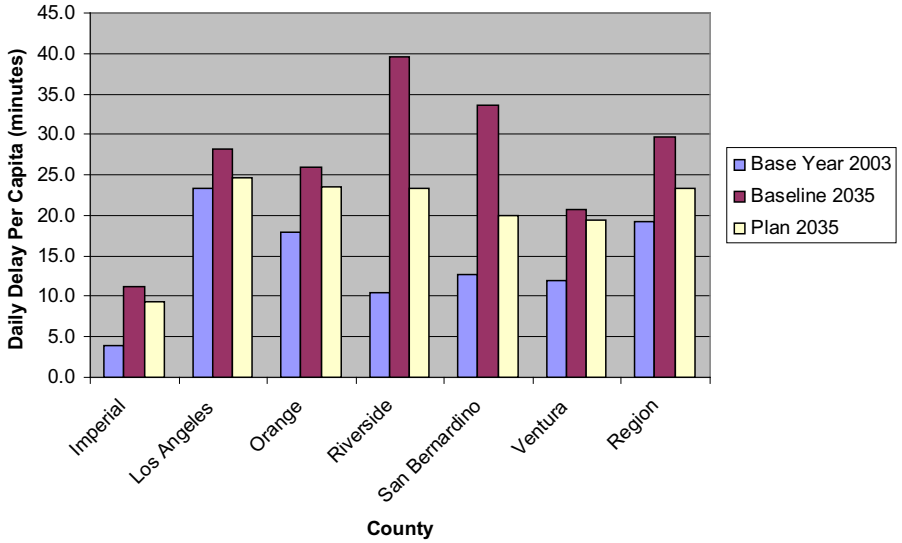


TABLE 17 PLAN 2035 DAILY VMT, VHT, DELAY, AND SPEED BY COUNTY AND CHANGE VS. BASELINE 2035

County	VMT	Change	VHT	Change	Delay (hours)	Change (hours)	Delay per capita (minutes)	Change (minutes)	Speed (mph)	Change (mph)
Imperial	11,194,000	-430,000	249,000	-18,000	35,000	-8,000	9.3	-1.9	44.9	+1.5
Los Angeles	254,324,000	-5,528,000	9,613,000	-581,000	3,511,000	-423,000	24.7	-3.5	26.5	+1.0
Orange	86,377,000	+802,000	2,996,000	-101,000	1,028,000	-98,000	23.6	-2.5	28.8	+1.2
Riverside	80,457,000	+4,611,000	2,588,000	-839,000	907,000	-701,000	23.3	-16.3	31.1	+6.3
San Bernardino	92,808,000	-5,063,000	2,530,000	-672,000	659,000	-522,000	20	-13.6	36.7	+6.1
Ventura	23,072,000	-264,000	747,000	-20,000	235,000	-14,000	19.5	-1.3	30.9	+0.5
Region	**548,232,000**	**-15,095,000**	**18,723,000**	**-2,232,000**	**6,374,000**	**-1,764,000**	**23.3**	**-6.4**	**29.3**	**+2.4**

Numbers may not add due to rounding.

As seen in Table 18, the Plan scenario brings about a reduction in travel time for the average AM Peak home-based work trip in each county over the Baseline scenario, especially in Riverside County. Commuters in all counties except Imperial and Orange will also drive shorter distances to get to work, with those in San Bernardino County seeing the greatest decrease.

Delay will decrease for all types of roadways except HOV lanes, and speed will also increase on every type of roadway, most noticeably expressways.

The following maps show the projected Plan average speeds of the freeway and arterial system during the AM and PM Peaks.

TABLE 18 PLAN 2035 HOME-BASED WORK TRIP AVERAGE STATISTICS AND CHANGE VS. BASELINE 2035 I AM PEAK

County	Time (minutes)	Change (minutes)	Distance (miles)	Change (miles)
Imperial	11.99	-0.88	7.54	+0.00
Los Angeles	29.00	-3.28	12.61	-0.68
Orange	23.79	-0.56	11.55	+0.30
Riverside	25.34	-12.24	13.14	-1.64
San Bernardino	26.38	-6.45	14.12	-0.43
Ventura	21.67	-0.87	11.43	-0.19
Region	**26.72**	**-4.23**	**12.54**	**-0.59**

Note: Numbers may not add due to rounding.

TABLE 19 PLAN 2035 DAILY VMT, VHT, DELAY, AND SPEED BY FACILITY TYPE AND CHANGE VS. BASELINE 2035

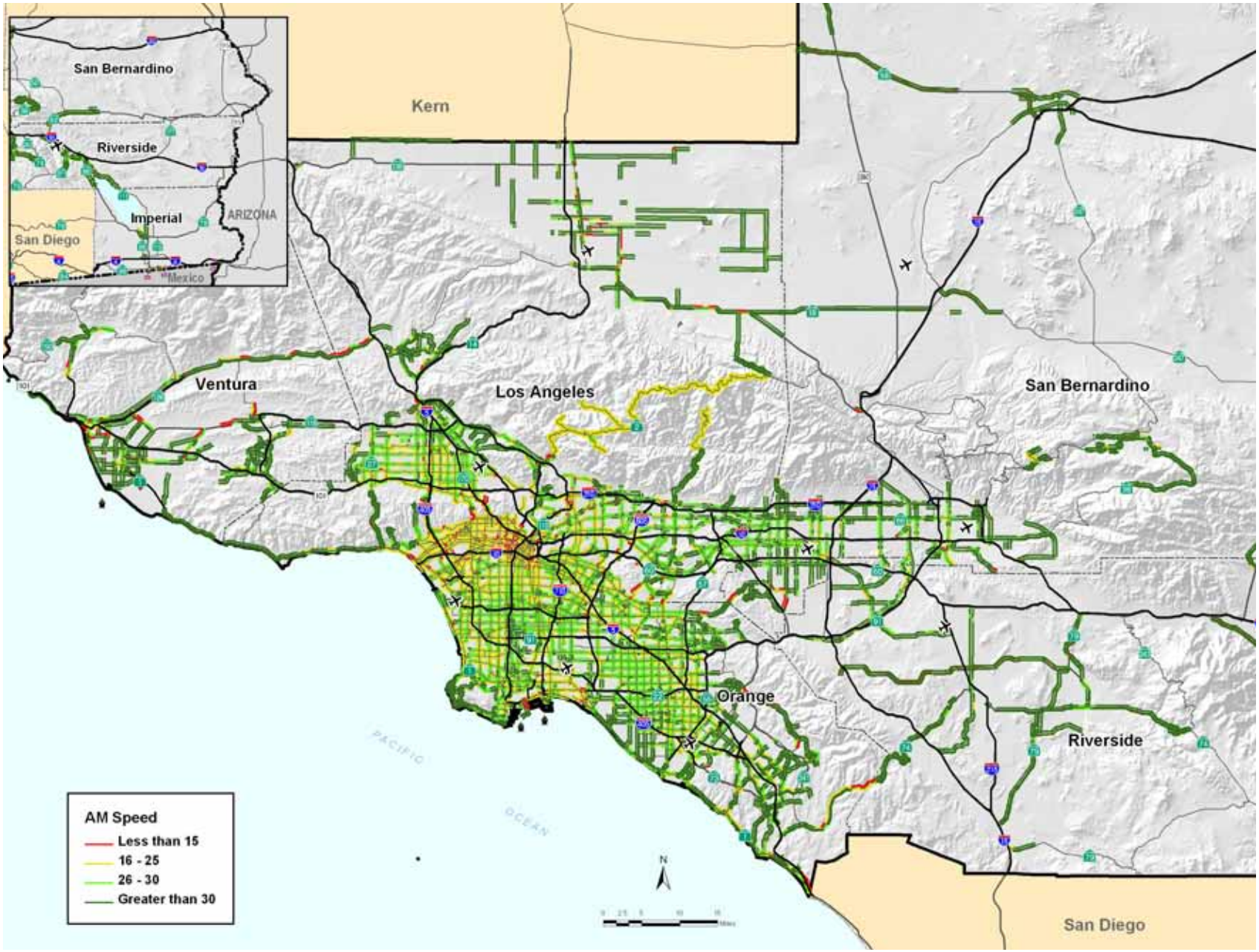
Facility Type*	VMT	Change	VHT	Change	Delay (hours)	Change (hours)	Speed (mph)	Change (mph)
Freeway (MF)*	249,053,000	+586,000	6,377,000	-721,000	2,572,000	-733,000	39.1	+4.0
Freeway (HOV)*	27,050,000	+4,565,000	739,000	+111,000	317,000	+40,000	36.6	+0.8
Expressway	8,420,000	+2,539,000	175,000	+18,000	39,000	-24,000	48.2	+10.7
Principal Arterial	105,662,000	-3,275,000	4,263,000	-321,000	1,422,000	-254,000	24.8	+1.0
Minor Arterial	77,075,000	-7,859,000	2,939,000	-413,000	687,000	-227,000	26.2	+0.9
Major Collector	20,360,000	-7,068,000	936,000	-416,000	357,000	-233,000	21.7	+1.5
Minor Collector	1,772,000	-627,000	77,000	-28,000	19,000	-8,000	23.1	+0.1
Ramps	16,114,000	+187,000	1,488,000	-317,000	964,000	-326,000	10.8	+2.0
Centroid Connector*	42,726,000	-4,145,000	1,729,000	-146,000	N/A	N/A	N/A	N/A
Region	**548,232,000**	**-15,095,000**	**18,723,000**	**-2,232,000**	**6,374,000**	**-1,764,000**	**29.3**	**+2.4**

* Notes: MF for mixed flow or general purpose lanes, as opposed to HOV , high occupancy vehicle or carpool lanes. Centroid connectors are intra-zonal links used in regional travel demand models such as SCAG's to allocate trips from zone centroids to the highway network.
Numbers may not add due to rounding.

EXHIBIT 17 PLAN 2035 FREEWAY SPEED | AM PEAK

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

EXHIBIT 18 PLAN 2035 ARTERIAL SPEED | AM PEAK

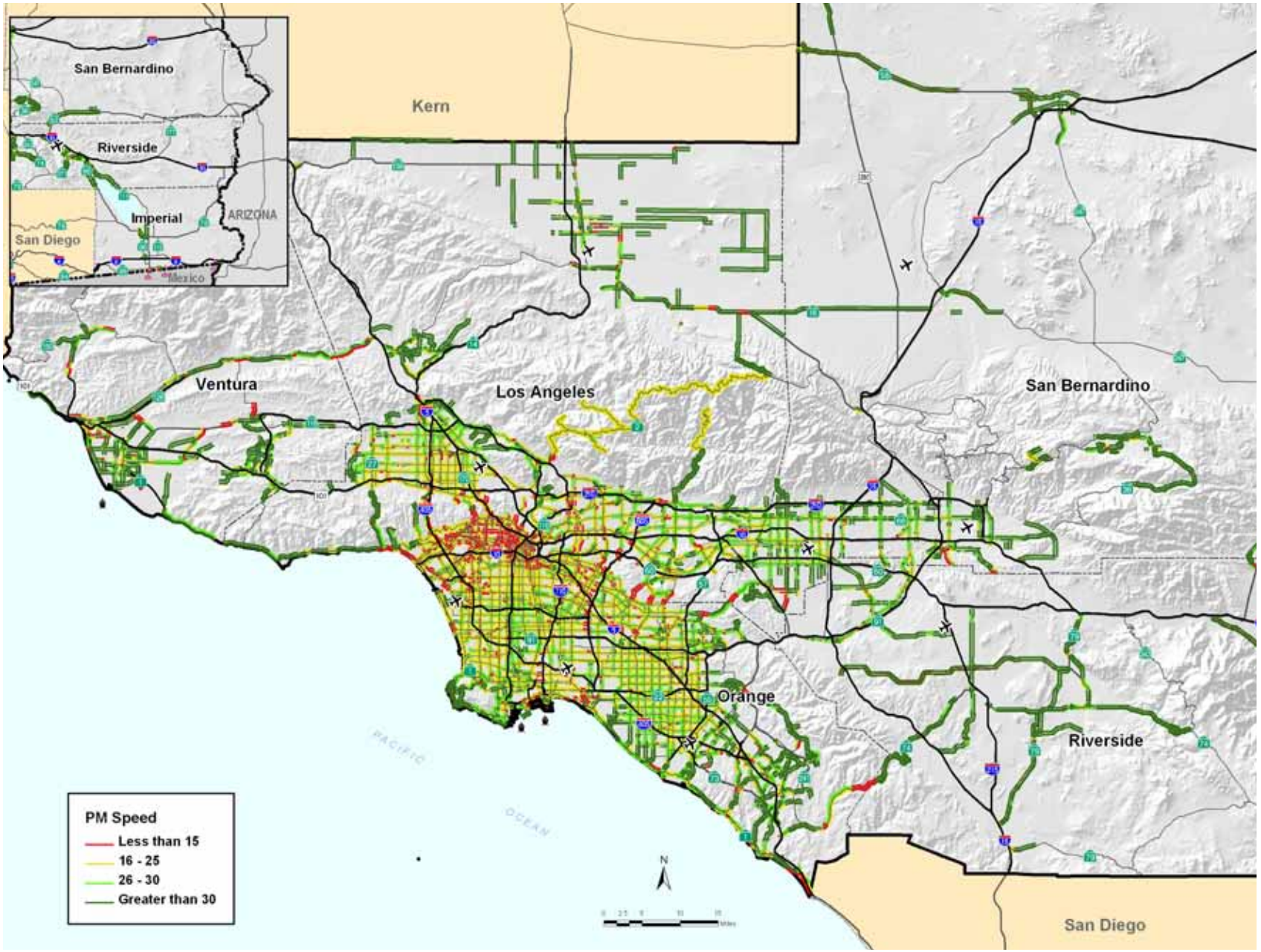


Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

EXHIBIT 19 PLAN 2035 FREEWAY SPEED | PM PEAK

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatla

EXHIBIT 20 PLAN 2035 ARTERIAL SPEED | PM PEAK



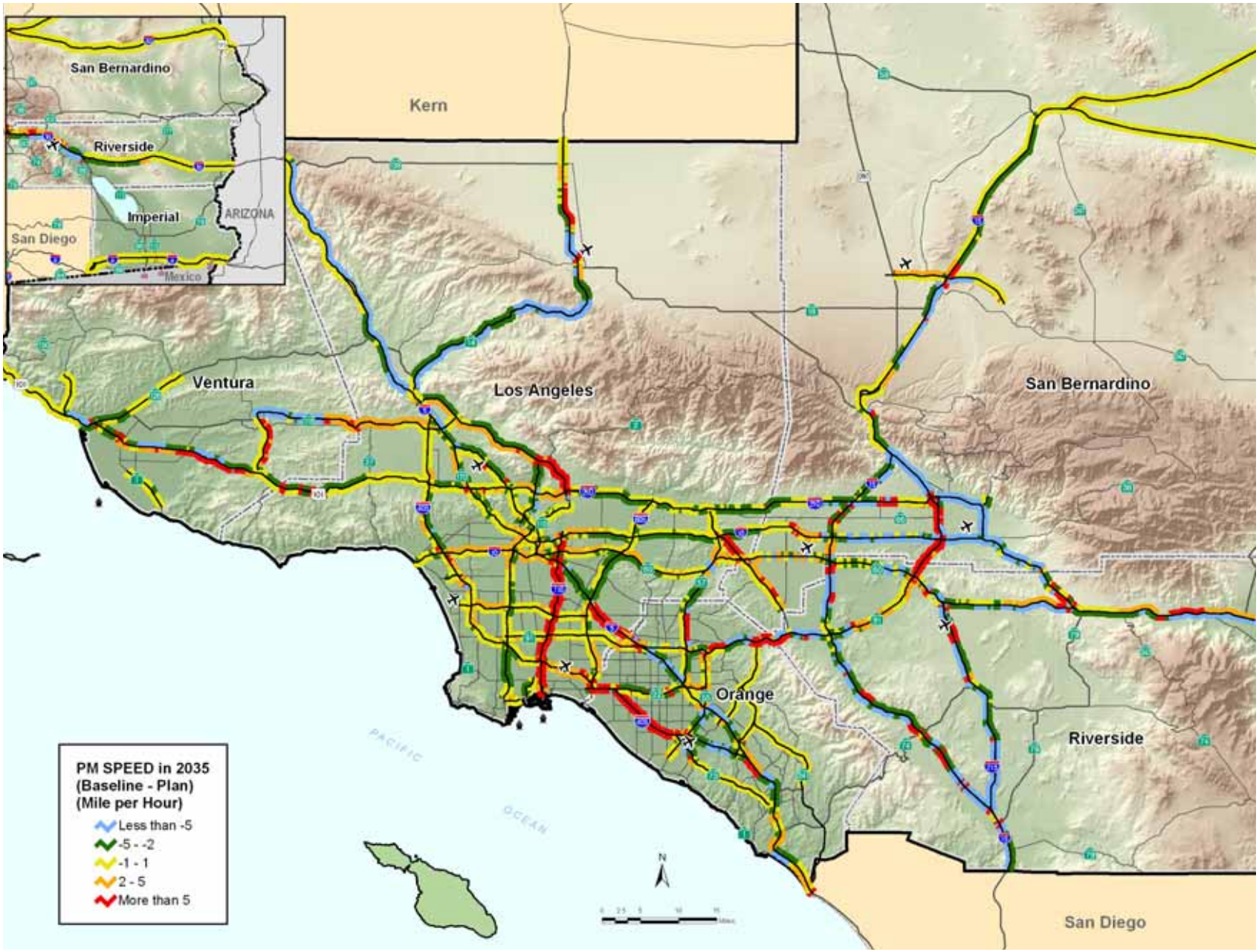
Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

The following maps show the projected improvement in speed between the Baseline 2035 and Plan 2035 scenarios on our highway system.

EXHIBIT 21 BASELINE 2035 VS. PLAN 2035 SPEED CHANGES AM PEAK

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

EXHIBIT 22 BASELINE 2035 VS. PLAN 2035 SPEED CHANGES | PM PEAK



Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

IMPROVED ACCESSIBILITY

The Plan 2035 system will bring about improvements in regional accessibility. Every county will see improvements in accessibility during the PM Peak Period not only over the Baseline 2035 scenario but also over the Base Year 2003 scenario (see Figure 12).

FIGURE 10 PLAN 2035 AUTO HOME-BASED WORK TRIP CUMULATIVE DISTRIBUTION | PM PEAK

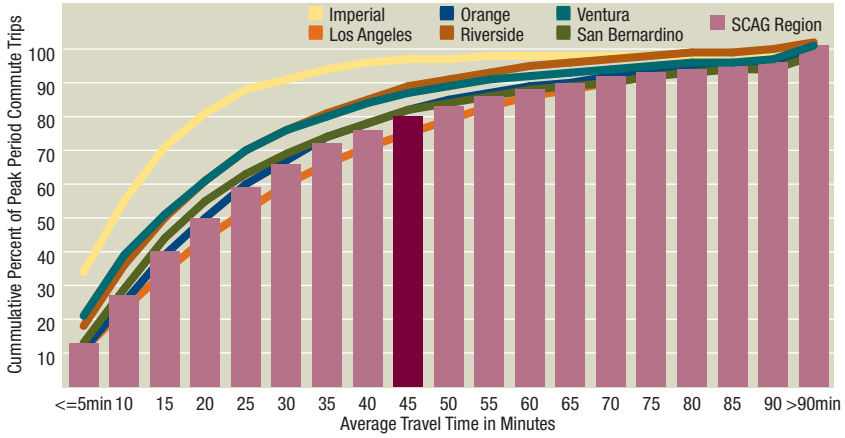


FIGURE 11 PLAN 2035 AUTO HOME-BASED WORK TRIP DISTRIBUTION PM PEAK

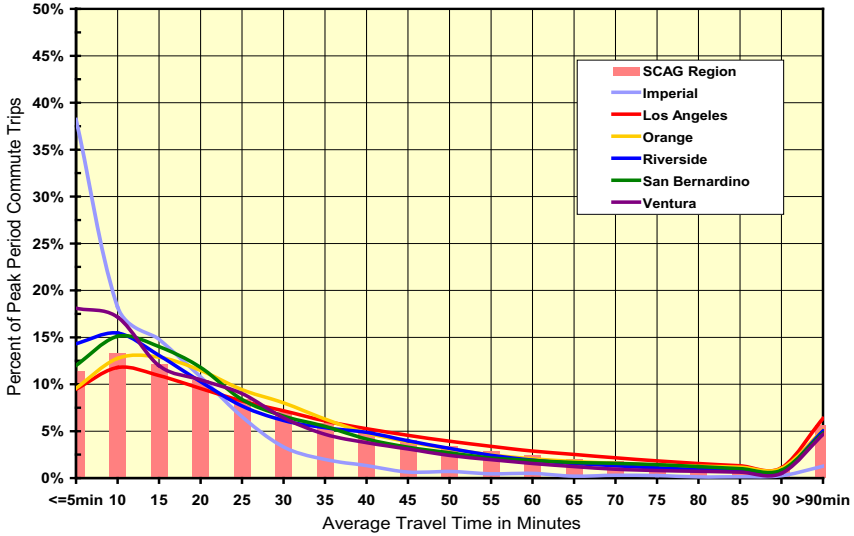
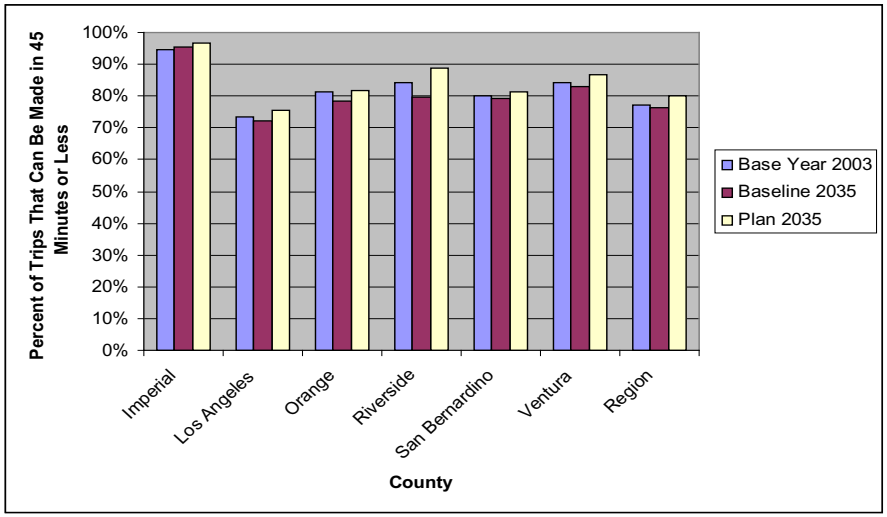


FIGURE 12 BASE YEAR 2003 VS. BASELINE 2035 VS. PLAN 2035 CHANGE IN ACCESSIBILITY



Conclusion

From the performance measures used to demonstrate the results of our investments in our highway and arterial system, it is evident that the future of this region will lack the mobility and accessibility at the same levels that exist even today. Huge challenges lie ahead, and even the huge investments that we are making today will not be enough for the region tomorrow.

Strategies other than simply building more roads are being undertaken to solve our region's complex transportation challenges. Due to environmental and health concerns as well as increasing roadway congestion, a renewed emphasis is being placed in this region on more strategic planning, including the development of a more extensive public transportation system as well as integrated land use. At the same time, we have made significant investments over the last few decades in an extensive system of highways and streets that can always be improved by productivity enhancements as well as expansions where necessary. The times are changing, but as our region grows, we must carefully monitor the existing system to find the best use of our limited finances to keep Southern California moving. As a part of this effort, corridor projects have been identified in this RTP's Strategic Plan for long-term study.

For those corridor projects, right-of-way preservation should be undertaken to begin laying the groundwork for advancing these long-range improvements. The SCAG Region is pursuing an innovative, environmentally sensitive approach to considering future development and transportation projects. This approach envisions that transportation options will be developed with consideration for environmentally sensitive land-uses and habitat issues as part of the planning and design criteria. It would involve early and active involvement by all stakeholders at the local, state, and federal levels.

This approach draws on the Community and Environmental Transportation Acceptability Process (CETAP) undertaken in Riverside County, which serves as a template for other agencies and jurisdictions seeking to preserve rights-of-way for long-range transportation needs. The four CETAP corridors, two intra-county corridors—the Mid-County Parkway and the Winchester-Temecula Corridor—and two inter-county corridors—the Riverside County-Orange County Corridor and the Moreno Valley-San Bernardino Corridor—are included in the financially constrained RTP.

As Riverside County has shown, it is important to identify and preserve transportation corridors needed to expand or enhance transportation for future generations. Local governments will find it difficult to obtain optimal locations for these corridors unless efforts to preserve them are made early. The American Association of State Highway and Transportation Officials (AASHTO) Report on Corridor Preservation states that early efforts provide the following benefits:

- prevent inconsistent development
- minimize or avoid environmental, social and economic impacts
- prevent the loss of desirable corridor locations
- allow for the orderly assessment of impacts
- permit orderly project development, and
- reduce costs

Planners and policy-makers should start preparing strategies for preserving corridors now to prevent losing rights-of-way needed for transportation beyond the year 2035. Rights-of-way preservation is a reasonable concern, particularly in areas where development may block a long-range corridor. More opportunities to capitalize on preservation are available in less-urban areas, where local governments have an opportunity to obtain available land for new transportation facilities.

The first step in this kind of planning is to identify potential long-range corridors and determine if there is a need to preserve them. This will require intergovernmental coordination and should include a funding component. Next, criteria to evaluate and prioritize the selected corridors must be developed. Once a corridor is selected, environmental studies will be needed. Traditional preservation techniques include purchasing land or using government statutes to place a corridor alignment on a general plan land-use map. Other

State and federal funds can be used to assist in acquiring land for long-range corridors.

Appendix

TABLE A1 BASE YEAR 2003 NETWORK SUMMARY STATISTICS

County	Centerline Miles	Lane Miles			
		AM Peak	Midday	PM Peak	Night
Freeway					
Imperial	93	375	375	375	375
Los Angeles	536	4,240	4,240	4,240	4,240
Orange	143	1,161	1,161	1,161	1,161
Riverside	300	1,651	1,651	1,651	1,651
San Bernardino	447	2,226	2,226	2,226	2,226
Ventura	91	509	509	509	509
Subtotal	*1,610*	*10,162*	*10,162*	*10,162*	*10,162*
Toll					
Imperial	0	0	0	0	0
Los Angeles	0	0	0	0	0
Orange	58	295	295	295	295
Riverside	0	0	0	0	0
San Bernardino	0	0	0	0	0
Ventura	0	0	0	0	0
Subtotal	*58*	*295*	*295*	*295*	*295*
Major Arterial					
Imperial	89	329	329	329	329
Los Angeles	2,290	8,656	8,562	8,677	8,565
Orange	664	3,136	3,135	3,135	3,135
Riverside	355	1,315	1,315	1,315	1,315
San Bernardino	579	1,821	1,821	1,821	1,821
Ventura	266	883	883	883	883
Subtotal	*4,243*	*16,140*	*16,045*	*16,160*	*16,048*
Minor Arterial					
Imperial	343	673	673	673	673
Los Angeles	2,951	9,226	9,171	9,218	9,166
Orange	871	3,130	3,133	3,130	3,130
Riverside	1,103	3,293	3,293	3,293	3,293
San Bernardino	1,591	4,289	4,289	4,289	4,289
Ventura	356	983	983	983	983
Subtotal	*7,215*	*21,594*	*21,542*	*21,586*	*21,534*
Collector					
Imperial	1,175	2,374	2,374	2,374	2,374
Los Angeles	1,497	3,359	3,359	3,359	3,359
Orange	150	449	449	449	449
Riverside	1,479	3,612	3,612	3,612	3,612
San Bernardino	2,699	5,977	5,977	5,977	5,977
Ventura	267	623	623	623	623
Subtotal	*7,267*	*16,394*	*16,394*	*16,394*	*16,394*
HOV					
Imperial	0	0	0	0	0
Los Angeles	201	415	415	415	415
Orange	93	191	191	191	191
Riverside	26	54	54	54	54
San Bernardino	39	78	78	78	78
Ventura	0	0	0	0	0
Subtotal	*359*	*738*	*738*	*738*	*738*
Total All Facilities					
Imperial	1,700	3,751	3,751	3,751	3,751
Los Angeles	7,475	25,896	25,747	25,909	25,745
Orange	1,979	8,362	8,364	8,361	8,361
Riverside	3,263	9,925	9,925	9,925	9,925
San Bernardino	5,355	14,391	14,391	14,391	14,391
Ventura	980	2,998	2,998	2,998	2,998
Total	20,752	65,323	65,176	65,335	65,171

TABLE A2 BASE YEAR 2003 AVERAGE PERSON TRIP LENGTH BY COUNTY AND TIME PERIOD

County	Trip Purpose	Home-Based Work	Home-Based Non-Work	Home-Based School	Other-Based Other	Work-Based Others
AM Peak						
Imperial	Time (minutes)	13.57	8.72	5.96	7.45	12.38
	Distance (miles)	9.39	6.05	3.85	4.83	8.55
Los Angeles	Time (minutes)	27.55	16.16	9.39	15.60	22.27
	Distance (miles)	12.48	7.49	4.23	7.12	10.34
Orange	Time (minutes)	23.92	15.44	8.08	14.56	20.48
	Distance (miles)	11.91	7.83	3.95	7.31	10.48
Riverside	Time (minutes)	32.59	21.67	9.34	16.43	25.25
	Distance (miles)	18.21	12.49	5.38	9.61	15.03
San Bernardino	Time (minutes)	34.88	20.74	8.42	17.40	26.83
	Distance (miles)	19.98	12.03	4.78	10.16	15.97
Ventura	Time (minutes)	25.89	16.14	6.67	13.46	21.32
	Distance (miles)	14.49	8.97	3.58	7.56	12.22
Region	**Time (minutes)**	**27.83**	**17.02**	**8.91**	**15.49**	**22.41**
	Distance (miles)	**13.68**	**8.59**	**4.34**	**7.67**	**11.25**

County	Trip Purpose	Home-Based Work	Home-Based Non-Work	Home-Based School	Other-Based Other	Work-Based Others
Midday						
Imperial	Time (minutes)	13.04	8.99	5.37	7.62	9.14
	Distance (miles)	9.29	6.43	3.51	5.23	6.17
Los Angeles	Time (minutes)	23.66	13.81	7.50	13.74	17.29
	Distance (miles)	12.80	7.35	3.73	7.28	9.08
Orange	Time (minutes)	21.80	13.82	6.50	13.43	16.18
	Distance (miles)	12.49	7.83	3.45	7.53	9.13
Riverside	Time (minutes)	28.35	19.06	7.98	16.48	17.77
	Distance (miles)	19.09	12.73	4.76	10.97	11.73
San Bernardino	Time (minutes)	30.11	18.33	7.09	17.77	19.57
	Distance (miles)	20.60	12.19	4.16	11.82	12.89
Ventura	Time (minutes)	23.16	14.61	5.65	13.60	15.22
	Distance (miles)	15.06	9.22	3.17	8.55	9.71
Region	**Time (minutes)**	**24.25**	**14.82**	**7.24**	**14.25**	**17.15**
	Distance (miles)	**14.15**	**8.57**	**3.82**	**8.12**	**9.61**

TABLE A3 BASELINE 2035 NETWORK SUMMARY STATISTICS

County	Centerline Miles	Lane Miles			
		AM Peak	Midday	PM Peak	Night
Freeway					
Imperial	93	373	373	373	373
Los Angeles	538	4,269	4,269	4,269	4,269
Orange	143	1,187	1,187	1,187	1,187
Riverside	301	1,683	1,683	1,683	1,683
San Bernardino	460	2,364	2,364	2,364	2,364
Ventura	91	517	517	517	517
Subtotal	*1,626*	*10,393*	*10,393*	*10,393*	*10,393*
Toll					
Imperial	0	0	0	0	0
Los Angeles	0	0	0	0	0
Orange	65	500	500	500	500
Riverside	0	0	0	0	0
San Bernardino	0	0	0	0	0
Ventura	0	0	0	0	0
Subtotal	*65*	*500*	*500*	*500*	*500*
Major Arterial					
Imperial	113	437	437	437	437
Los Angeles	2,208	8,810	8,718	8,831	8,720
Orange	658	3,183	3,183	3,183	3,182
Riverside	337	1,244	1,244	1,244	1,244
San Bernardino	550	1,784	1,784	1,784	1,785
Ventura	256	891	891	891	891
Subtotal	*4,122*	*16,349*	*16,257*	*16,370*	*16,259*
Minor Arterial					
Imperial	331	682	682	682	682
Los Angeles	2,960	9,332	9,277	9,324	9,272
Orange	869	3,128	3,130	3,128	3,128
Riverside	1,116	3,133	3,132	3,132	3,134
San Bernardino	1,583	4,230	4,230	4,230	4,230
Ventura	364	1,006	1,006	1,006	1,006
Subtotal	*7,223*	*21,511*	*21,457*	*21,502*	*21,452*
Collector					
Imperial	1,172	2,369	2,369	2,369	2,369
Los Angeles	1,486	3,343	3,343	3,343	3,343
Orange	150	450	450	450	450
Riverside	1,487	3,494	3,494	3,494	3,494
San Bernardino	2,711	6,036	6,004	6,004	6,004
Ventura	263	615	615	615	615
Subtotal	*7,269*	*16,307*	*16,275*	*16,275*	*16,275*
HOV					
Imperial	0	0	0	0	0
Los Angeles	246	504	504	504	504
Orange	101	212	212	212	212
Riverside	35	72	72	72	72
San Bernardino	46	93	93	93	93
Ventura	0	0	0	0	0
Subtotal	*428*	*881*	*881*	*881*	*881*
Total All Facilities					
Imperial	1,709	3,861	3,861	3,861	3,861
Los Angeles	7,438	26,258	26,111	26,271	26,108
Orange	1,986	8,660	8,662	8,660	8,659
Riverside	3,276	9,626	9,625	9,625	9,627
San Bernardino	5,350	14,507	14,475	14,475	14,476
Ventura	974	3,029	3,029	3,029	3,029
Total	20,733	65,941	65,763	65,921	65,760

TABLE A4 BASELINE 2035 AVERAGE PERSON TRIP LENGTH BY COUNTY AND TIME PERIOD

County	Trip Purpose	Home-Based Work	Home-Based Non-Work	Home-Based School	Other-Based Other	Work-Based Others
AM Peak						
Imperial	Time (minutes)	12.87	8.48	7.50	8.06	11.81
	Distance (miles)	7.53	4.93	4.67	4.77	7.29
Los Angeles	Time (minutes)	32.29	18.10	10.35	15.82	22.75
	Distance (miles)	13.29	7.70	4.28	6.83	9.92
Orange	Time (minutes)	24.35	15.62	9.94	15.12	21.14
	Distance (miles)	11.25	7.32	4.49	7.11	10.06
Riverside	Time (minutes)	37.58	26.04	18.16	14.41	22.04
	Distance (miles)	14.78	10.86	6.58	6.74	10.28
San Bernardino	Time (minutes)	32.83	23.07	12.36	15.65	24.03
	Distance (miles)	14.55	10.49	6.08	7.88	12.11
Ventura	Time (minutes)	22.53	15.52	7.07	12.37	19.40
	Distance (miles)	11.62	8.04	3.52	6.47	10.36
Region	**Time (minutes)**	**30.95**	**19.37**	**11.62**	**15.22**	**22.25**
	Distance (miles)	**13.13**	**8.47**	**4.89**	**6.96**	**10.23**

County	Trip Purpose	Home-Based Work	Home-Based Non-Work	Home-Based School	Other-Based Other	Work-Based Others
Midday						
Imperial	Time (minutes)	12.13	8.56	6.84	7.56	8.99
	Distance (miles)	7.83	5.58	4.41	4.68	5.66
Los Angeles	Time (minutes)	25.96	15.32	7.91	14.41	17.62
	Distance (miles)	13.38	7.82	3.80	7.25	8.76
Orange	Time (minutes)	21.46	13.83	7.82	14.17	16.46
	Distance (miles)	11.68	7.42	4.08	7.56	8.86
Riverside	Time (minutes)	28.27	20.67	11.76	15.35	16.46
	Distance (miles)	16.02	11.83	6.19	8.54	9.07
San Bernardino	Time (minutes)	27.24	19.35	10.12	16.88	18.41
	Distance (miles)	15.80	11.13	5.71	9.73	10.58
Ventura	Time (minutes)	20.47	14.18	5.96	13.01	14.18
	Distance (miles)	12.43	8.44	3.24	7.71	8.51
Region	**Time (minutes)**	**25.18**	**16.32**	**8.71**	**14.69**	**17.10**
	Distance (miles)	**13.61**	**8.81**	**4.46**	**7.81**	**8.98**

TABLE A5 PLAN 2035 NETWORK SUMMARY STATISTICS

County	Centerline Miles	Lane Miles			
		AM Peak	Midday	PM Peak	Night
Freeway					
Imperial	100	412	412	412	412
Los Angeles	646	4,749	4,749	4,749	4,749
Orange	172	1,422	1,422	1,422	1,422
Riverside	324	1,949	1,949	1,949	1,949
San Bernardino	510	2,710	2,710	2,710	2,710
Ventura	94	555	555	555	555
Subtotal	*1,845*	*11,798*	*11,798*	*11,798*	*11,798*
Toll					
Imperial	0	0	0	0	0
Los Angeles	24	144	144	144	144
Orange	83	541	541	541	541
Riverside	3	13	13	13	13
San Bernardino	0	0	0	0	0
Ventura	0	0	0	0	0
Subtotal	*110*	*698*	*698*	*698*	*698*
Major Arterial					
Imperial	134	543	543	543	543
Los Angeles	2,242	9,118	9,026	9,138	9,027
Orange	658	3,202	3,202	3,202	3,202
Riverside	380	1,666	1,666	1,666	1,663
San Bernardino	753	2,966	2,966	2,966	2,966
Ventura	257	908	908	908	908
Subtotal	*4,425*	*18,402*	*18,310*	*18,422*	*18,308*
Minor Arterial					
Imperial	319	648	648	648	648
Los Angeles	2,950	9,340	9,286	9,332	9,280
Orange	880	3,168	3,171	3,168	3,168
Riverside	1,173	4,000	4,000	4,000	4,000
San Bernardino	1,571	4,678	4,678	4,678	4,678
Ventura	364	1,040	1,040	1,040	1,040
Subtotal	*7,256*	*22,874*	*22,823*	*22,866*	*22,815*
Collector					
Imperial	1,164	2,353	2,353	2,353	2,353
Los Angeles	1,487	3,355	3,355	3,355	3,355
Orange	149	439	439	439	439
Riverside	1,596	4,256	4,256	4,256	4,256
San Bernardino	2,618	5,907	5,907	5,907	5,907
Ventura	267	623	623	623	623
Subtotal	*7,282*	*16,934*	*16,934*	*16,934*	*16,934*
HOV					
Imperial	0	0	0	0	0
Los Angeles	320	570	570	570	570
Orange	121	243	243	243	243
Riverside	93	132	132	132	132
San Bernardino	153	206	206	206	206
Ventura	4	7	7	7	7
Subtotal	*691*	*1,159*	*1,159*	*1,159*	*1,159*
Total All Facilities					
Imperial	1,717	3,956	3,956	3,956	3,956
Los Angeles	7,669	27,276	27,130	27,288	27,125
Orange	2,063	9,015	9,018	9,015	9,015
Riverside	3,569	12,016	12,016	12,016	12,013
San Bernardino	5,605	16,467	16,467	16,467	16,467
Ventura	986	3,133	3,133	3,133	3,133
Total	21,609	71,865	71,722	71,877	71,712

TABLE A6 PLAN 2035 AVERAGE PERSON TRIP LENGTH BY COUNTY AND TIME PERIOD

County	Trip Purpose	Home-Based Work	Home-Based Non-Work	Home-Based School	Other-Based Other	Work-Based Others
AM Peak						
Imperial	Time (minutes)	11.99	9.07	7.35	8.26	12.07
	Distance (miles)	7.54	5.72	4.73	5.05	7.73
Los Angeles	Time (minutes)	29.00	16.40	9.98	16.05	23.04
	Distance (miles)	12.61	7.29	4.30	7.03	10.25
Orange	Time (minutes)	23.79	15.25	9.06	15.90	22.19
	Distance (miles)	11.55	7.53	4.25	7.87	11.19
Riverside	Time (minutes)	25.34	19.39	10.23	15.19	22.87
	Distance (miles)	13.14	10.45	5.42	8.12	12.50
San Bernardino	Time (minutes)	26.38	18.40	9.65	16.25	24.95
	Distance (miles)	14.12	10.06	5.42	9.01	14.01
Ventura	Time (minutes)	21.67	14.87	6.86	12.29	19.19
	Distance (miles)	11.43	7.93	3.45	6.56	10.52
Region	**Time (minutes)**	**26.72**	**16.76**	**9.68**	**15.66**	**22.79**
	Distance (miles)	**12.54**	**8.14**	**4.58**	**7.54**	**11.12**

County	Trip Purpose	Home-Based Work	Home-Based Non-Work	Home-Based School	Other-Based Other	Work-Based Others
Midday						
Imperial	Time (minutes)	11.27	9.00	6.73	7.81	9.15
	Distance (miles)	7.44	6.10	4.44	5.00	5.94
Los Angeles	Time (minutes)	24.51	14.14	8.02	14.40	17.78
	Distance (miles)	12.87	7.32	3.84	7.38	8.97
Orange	Time (minutes)	21.15	13.39	7.24	14.62	17.19
	Distance (miles)	11.90	7.44	3.78	8.16	9.64
Riverside	Time (minutes)	22.07	17.06	8.81	14.98	16.58
	Distance (miles)	13.68	10.75	5.05	9.17	10.12
San Bernardino	Time (minutes)	23.34	16.46	8.45	16.94	18.88
	Distance (miles)	14.79	10.34	4.99	10.59	11.75
Ventura	Time (minutes)	19.81	13.68	5.79	13.08	14.25
	Distance (miles)	12.22	8.29	3.16	7.89	8.67
Region	**Time (minutes)**	**23.05**	**14.66**	**7.97**	**14.70**	**17.39**
	Distance (miles)	**12.92**	**8.25**	**4.15**	**8.18**	**9.51**

TABLE A7 BASE YEAR 2003 DAILY VMT, VHT, DELAY, AND SPEED BY COUNTY AND TIME PERIOD (IN THOUSANDS)

	VMT		VHT		Delay (Hours)		Speed (mph)		Total (Auto + Truck)			
County	Auto	Truck	Auto	Truck	Auto	Truck	Auto	Truck	VMT	VHT	Delay	Speed
AM Peak												
Imperial	972	75	21	1	2	*	46.3	53.7	1,047	22	2	46.8
Los Angeles	42,234	1,596	1,596	55	566	22	26.5	28.9	43,830	1,652	587	26.5
Orange	13,787	496	461	16	141	6	29.9	31.1	14,282	477	147	29.9
Riverside	8,207	565	222	13	51	3	37.0	44.8	8,771	234	54	37.5
San Bernardino	10,255	762	269	17	57	4	38.1	43.6	11,017	287	61	38.4
Ventura	3,698	161	104	4	23	1	35.5	38.7	3,858	108	24	35.6
Region Total	**79,152**	**3,654**	**2,674**	**107**	**839**	**35**	**29.6**	**34.2**	**82,806**	**2,781**	**875**	**29.8**
PM Peak												
Imperial	1,452	126	32	2	3	*	45.4	53.1	1,578	34	3	45.9
Los Angeles	71,114	2,581	3,290	111	1,494	56	21.6	23.3	73,695	3,401	1,549	21.7
Orange	23,059	803	893	31	343	14	25.8	26.2	23,863	923	356	25.8
Riverside	13,314	930	376	22	95	6	35.4	42.5	14,244	398	101	35.8
San Bernardino	16,471	1,269	488	33	138	10	33.7	38.6	17,741	521	148	34.0
Ventura	6,136	267	201	8	65	3	30.5	32.8	6,404	209	68	30.6
Region Total	**131,547**	**5,977**	**5,281**	**207**	**2,137**	**89**	**24.9**	**28.9**	**137,524**	**5,488**	**2,226**	**25.1**
Midday												
Imperial	1,272	220	27	4	2	*	47.2	54.5	1,492	31	2	48.2
Los Angeles	59,235	4,376	1,871	125	435	35	31.7	34.9	63,611	1,996	470	31.9
Orange	19,260	1,348	560	37	111	9	34.4	36.7	20,609	596	120	34.6
Riverside	11,634	1,512	282	30	39	5	41.2	49.6	13,146	313	44	42.0
San Bernardino	14,192	1,950	340	40	42	6	41.7	48.5	16,142	381	48	42.4
Ventura	4,940	418	128	10	17	2	38.6	43.2	5,358	138	19	39.0
Region Total	**110,535**	**9,824**	**3,208**	**246**	**646**	**56**	**34.5**	**39.9**	**120,359**	**3,454**	**703**	**34.8**
Night												
Imperial	641	184	13	3	*	*	49.4	56.9	825	16	*	50.9
Los Angeles	31,949	3,489	777	72	59	7	41.1	48.2	35,438	849	65	41.7
Orange	10,365	1,127	244	23	16	2	42.5	48.3	11,492	267	18	43.0
Riverside	6,160	1,497	129	25	5	1	47.6	58.9	7,658	155	6	49.5
San Bernardino	7,345	1,983	157	35	6	2	46.9	57.3	9,327	191	8	48.8

	VMT		VHT		Delay (Hours)		Speed (mph)		Total (Auto + Truck)			
County	Auto	Truck	Auto	Truck	Auto	Truck	Auto	Truck	VMT	VHT	Delay	Speed
Ventura	2,632	368	60	7	3	*	44.0	51.6	3,000	67	3	44.8
Region Total	**59,092**	**8,648**	**1,379**	**166**	**89**	**12**	**42.8**	**52.0**	**67,740**	**1,545**	**101**	**43.8**
Daily												
Imperial	4,337	606	93	11	6	1	46.7	54.8	4,942	104	7	47.5
Los Angeles	204,533	12,042	7,534	364	2,553	119	27.1	33.1	216,575	7,898	2,673	27.4
Orange	66,472	3,774	2,158	107	611	31	30.8	35.4	70,246	2,264	642	31.0
Riverside	39,315	4,504	1,009	90	190	14	38.9	49.8	43,819	1,100	205	39.8
San Bernardino	48,263	5,964	1,255	125	242	22	38.5	47.6	54,228	1,380	264	39.3
Ventura	17,406	1,213	493	29	108	6	35.3	41.7	18,620	522	114	35.7
Region Total	**380,326**	**28,103**	**12,542**	**726**	**3,711**	**193**	**30.3**	**38.7**	**408,429**	**13,268**	**3,904**	**30.8**

* Value is less than 1,000.
Numbers may not add due to rounding.

TABLE A8 BASE YEAR 2003 DAILY VMT, VHT, DELAY, AND SPEED BY FACILITY TYPE AND TIME PERIOD

	VMT		VHT		Delay (Hours)		Speed (mph)		Total			
Facility Type	Auto	Truck	Auto	Truck	Auto	Truck	Auto	Truck	VMT	VHT	Delay	Speed
AM Peak												
Freeway (MF)	36,005	2,504	966	61	413	23	37.3	41.0	38,510	1,027	436	37.5
Freeway (HOV)	2,343	0	58	0	21	0	40.7	N/A	2,343	58	21	40.7
Expressway	368	43	9	1	2	*	43.1	50.8	411	9	3	43.8
Principal Arterial	17,362	491	665	18	185	5	26.1	27.5	17,853	683	190	26.2
Minor Arterial	12,058	299	448	11	86	2	26.9	28.2	12,357	458	88	27.0
Major Collector	2,428	73	88	3	18	1	27.7	27.0	2,502	90	18	27.7
Minor Collector	216	8	9	*	1	*	25.2	26.6	224	9	1	25.2
Ramps	2,503	100	195	8	113	5	12.8	12.7	2,603	203	118	12.8
Centroid Connector	5,868	135	238	6	N/A	N/A	N/A	N/A	6,003	244	N/A	N/A
Region Total	**79,152**	**3,654**	**2,674**	**107**	**839**	**35**	**29.6**	**34.2**	**82,806**	**2,781**	**875**	**29.8**
PM Peak												
Freeway (MF)	54,429	3,984	1,829	117	993	57	29.8	33.9	58,412	1,946	1,050	30.0
Freeway (HOV)	4,249	0	129	0	63	0	32.9	N/A	4,249	129	63	32.9
Expressway	556	68	14	1	5	*	40.1	49.0	624	15	5	40.9
Principal Arterial	30,565	849	1,386	36	536	14	22.1	23.4	31,414	1,422	550	22.1
Minor Arterial	22,713	551	957	22	265	6	23.7	25.0	23,264	979	271	23.8
Major Collector	4,520	143	173	5	40	1	26.2	26.3	4,663	178	41	26.2
Minor Collector	431	16	19	1	4	*	22.7	24.6	447	20	4	22.8
Ramps	3,838	156	356	15	230	10	10.8	10.3	3,994	371	241	10.8
Centroid Connector	10,245	211	418	9	N/A	N/A	N/A	N/A	10,456	427	N/A	N/A
Region Total	**131,547**	**5,977**	**5,281**	**207**	**2,137**	**89**	**24.9**	**28.9**	**137,524**	**5,488**	**2,226**	**25.1**
Midday												
Freeway (MF)	52,413	6,862	1,131	140	325	36	46.3	48.9	59,275	1,271	361	46.6
Freeway (HOV)	2,330	0	46	0	10	0	50.7	N/A	2,330	46	10	50.7
Expressway	534	125	12	2	3	*	45.3	53.2	660	14	3	46.6
Principal Arterial	23,412	1,258	790	41	144	8	29.7	30.6	24,670	831	151	29.7
Minor Arterial	15,322	727	520	24	61	3	29.5	30.7	16,049	543	64	29.5
Major Collector	3,030	181	99	6	12	1	30.6	29.6	3,211	105	13	30.5
Minor Collector	281	22	11	1	1	*	26.1	26.5	303	12	1	26.1

Facility Type	VMT		VHT		Delay (Hours)		Speed (mph)		Total			
	Auto	Truck	Auto	Truck	Auto	Truck	Auto	Truck	VMT	VHT	Delay	Speed
Ramps	3,704	286	213	17	91	8	17.4	16.5	3,990	230	99	17.3
Centroid Connector	9,509	363	387	15	N/A	N/A	N/A	N/A	9,872	402	N/A	N/A
Region Total	**110,535**	**9,824**	**3,208**	**246**	**646**	**56**	**34.5**	**39.9**	**120,359**	**3,454**	**703**	**34.8**
Night												
Freeway (MF)	33,332	6,837	565	112	51	9	59.0	60.8	40,169	677	60	59.3
Freeway (HOV)	576	0	10	0	1	0	60.4	N/A	576	10	1	60.4
Expressway	315	115	6	2	1	*	54.4	59.7	430	8	1	55.7
Principal Arterial	10,606	745	305	20	16	1	34.8	37.4	11,351	325	17	35.0
Minor Arterial	6,036	378	181	11	6	*	33.3	35.5	6,414	192	6	33.4
Major Collector	1,217	93	35	2	1	*	34.4	37.3	1,310	38	1	34.6
Minor Collector	101	13	4	*	*	*	28.8	28.9	114	4	*	28.8
Ramps	2,432	245	93	9	14	2	26.1	26.5	2,677	102	15	26.1
Centroid Connector	4,477	222	182	9	N/A	N/A	N/A	N/A	4,699	191	N/A	N/A
Region Total	**59,092**	**8,648**	**1,379**	**166**	**89**	**12**	**42.8**	**52**	**67,740**	**1,545**	**101**	**43.8**
Daily												
Freeway (MF)	176,180	20,186	4,490	431	1,783	125	39.2	46.8	196,366	4,921	1,908	39.9
Freeway (HOV)	9,498	0	242	0	94	0	39.2	N/A	9,498	242	94	39.2
Expressway	1,774	351	40	7	11	1	44.3	53.9	2,125	47	12	45.7
Principal Arterial	81,945	3,344	3,145	115	880	28	26.1	29.0	85,289	3,260	908	26.2
Minor Arterial	56,129	1,955	2,106	67	417	11	26.7	29.2	58,084	2,173	428	26.7
Major Collector	11,196	490	395	17	71	3	28.4	29.2	11,686	411	74	28.4
Minor Collector	1,030	59	42	2	6	*	24.6	26.4	1,089	44	6	24.7
Ramps	12,477	786	857	50	449	25	14.6	15.9	13,263	907	473	14.6
Centroid Connector	30,099	931	1,225	38	N/A	N/A	N/A	N/A	31,030	1,263	N/A	N/A
Region Total	**380,326**	**28,103**	**12,542**	**726**	**3,711**	**193**	**30.3**	**38.7**	**408,429**	**13,268**	**3,904**	**30.8**

* Value is less than 1,000.

Notes: MF for mixed flow or general purpose lanes, as opposed to HOV, high occupancy vehicle or carpool lanes. Centroid connectors are intra-zonal links used in regional travel demand models such as SCAG's to allocate trips from zone centroids to the highway network.

Numbers may not add due to rounding.

TABLE A9 BASELINE 2035 DAILY VMT, VHT, DELAY, AND SPEED BY COUNTY AND TIME PERIOD

	VMT		VHT		Delay (Hours)		Speed (mph)		Total (Auto + Truck)			
County	Auto	Truck	Auto	Truck	Auto	Truck	Auto	Truck	VMT	VHT	Delay	Speed
AM PEAK												
Imperial	2,160	164	57	3	15	1	37.6	48.8	2,324	61	15	38.2
Los Angeles	49,012	2,590	2,049	99	845	47	23.9	26.2	51,602	2,148	891	24.0
Orange	16,609	694	660	26	273	12	25.2	26.8	17,303	686	285	25.2
Riverside	15,881	1,182	765	41	416	20	20.8	28.7	17,063	806	436	21.2
San Bernardino	17,280	1,890	625	63	257	30	27.6	30.2	19,170	688	287	27.9
Ventura	4,584	245	176	8	73	3	26.1	31.6	4,830	184	76	26.3
Region Total	**105,527**	**6,765**	**4,333**	**240**	**1,878**	**112**	**24.4**	**28.2**	**112,293**	**4,573**	**1,991**	**24.6**
PM PEAK												
Imperial	3,609	254	88	5	17	1	40.9	47.9	3,863	93	18	41.3
Los Angeles	82,649	3,914	4,247	185	2,143	105	19.5	21.1	86,563	4,433	2,248	19.5
Orange	27,746	1,092	1,267	50	603	28	21.9	21.8	28,838	1,317	631	21.9
Riverside	24,806	1,898	1,365	87	807	53	18.2	21.8	26,704	1,452	860	18.4
San Bernardino	28,308	3,091	1,174	124	555	70	24.1	24.9	31,399	1,298	625	24.2
Ventura	7,424	404	291	15	122	7	25.5	27.0	7,828	306	129	25.6
Region Total	**174,542**	**10,652**	**8,432**	**467**	**4,248**	**264**	**20.7**	**22.8**	**185,194**	**8,899**	**4,512**	**20.8**
MIDDAY												
Imperial	3,051	429	67	8	7	1	45.7	52.0	3,480	75	8	46.4
Los Angeles	70,982	6,596	2,346	210	622	79	30.3	31.4	77,577	2,556	701	30.4
Orange	23,417	1,833	710	52	166	16	33.0	35.1	25,250	762	183	33.1
Riverside	22,886	3,091	745	92	246	38	30.7	33.7	25,976	836	284	31.1
San Bernardino	24,956	4,738	723	128	195	47	34.5	36.9	29,694	851	242	34.9
Ventura	6,238	623	175	16	34	4	35.5	40.1	6,861	191	38	35.9
Region Total	**151,529**	**17,310**	**4,766**	**506**	**1,271**	**184**	**31.8**	**34.2**	**168,839**	**5,272**	**1,455**	**32.0**
NIGHT												
Imperial	1,538	419	31	7	1	*	49.6	56.9	1,956	38	2	51.0
Los Angeles	38,300	5,809	938	119	81	13	40.8	48.8	44,110	1,057	94	41.7
Orange	12,502	1,683	297	34	22	4	42.1	48.9	14,184	331	26	42.8
Riverside	12,077	3,248	273	60	22	6	44.2	54.4	15,325	333	28	46.0
San Bernardino	12,711	4,897	278	87	19	8	45.7	56.1	17,608	365	26	48.2

HIGHWAYS AND ARTERIALS REPORT 57

	VMT		VHT		Delay (Hours)		Speed (mph)		Total (Auto + Truck)			
County	Auto	Truck	Auto	Truck	Auto	Truck	Auto	Truck	VMT	VHT	Delay	Speed
Ventura	3,248	570	76	11	4	1	43.0	51.7	3,818	87	5	44.1
Region Total	**80,376**	**16,626**	**1,893**	**319**	**149**	**32**	**42.5**	**52.1**	**97,001**	**2,212**	**181**	**43.9**
					DAILY							
Imperial	10,358	1,266	243	24	40	3	42.5	52.1	11,624	268	43	43.4
Los Angeles	240,944	18,908	9,580	613	3,690	244	25.1	30.8	259,852	10,193	3,934	25.5
Orange	80,273	5,302	2,934	163	1,065	61	27.4	32.6	85,575	3,097	1,126	27.6
Riverside	75,650	9,419	3,148	280	1,490	117	24.0	33.7	85,069	3,427	1,607	24.8
San Bernardino	83,255	14,616	2,800	402	1,026	154	29.7	36.3	97,871	3,202	1,180	30.6
Ventura	21,494	1,842	718	49	234	15	29.9	37.4	23,336	767	249	30.4
Region Total	**511,974**	**51,353**	**19,424**	**1,531**	**7,546**	**593**	**26.4**	**33.5**	**563,327**	**20,955**	**8,138**	**26.9**

* Value is less than 1,000.
Numbers may not add due to rounding.

HIGHWAYS AND ARTERIALS REPORT 58

TABLE A10 BASELINE 2035 DAILY VMT, VHT, DELAY, AND SPEED BY FACILITY TYPE AND TIME PERIOD

	VMT		VHT		Delay (Hours)		Speed (mph)		Total			
Facility Type	Auto	Truck	Auto	Truck	Auto	Truck	Auto	Truck	VMT	VHT	Delay	Speed
AM Peak												
Freeway (MF)	42,026	4,790	1,383	143	741	70	30.4	33.6	46,816	1,526	811	30.7
Freeway (HOV)	4,428	0	134	0	65	0	33.1	N/A	4,428	134	65	33.1
Expressway	1,075	96	39	3	22	1	27.2	36.1	1,172	42	23	27.8
Principal Arterial	21,764	730	982	32	399	13	22.2	23.0	22,494	1,014	412	22.2
Minor Arterial	17,762	538	719	20	211	6	24.7	26.3	18,300	739	217	24.7
Major Collector	6,326	217	297	10	122	5	21.3	20.9	6,543	308	127	21.3
Minor Collector	508	23	21	2	5	1	23.9	14.2	531	23	6	23.2
Ramps	2,902	171	407	22	313	17	7.1	7.8	3,073	429	330	7.2
Centroid Connector	8,736	201	350	8	N/A	N/A	N/A	N/A	8,937	358	N/A	N/A
Region Total	**105,527**	**6,765**	**4,333**	**240**	**1,878**	**112**	**24.4**	**28.2**	**112,293**	**4,573**	**1,991**	**24.6**
PM Peak												
Freeway (MF)	64,215	7,358	2,581	271	1,599	159	24.9	27.2	71,573	2,852	1,759	25.1
Freeway (HOV)	7,223	0	271	0	157	0	26.7	N/A	7,223	271	157	26.7
Expressway	1,566	144	48	4	23	2	32.3	35.3	1,711	53	25	32.5
Principal Arterial	37,809	1,204	1,948	60	924	29	19.4	20.1	39,013	2,008	952	19.4
Minor Arterial	32,274	958	1,475	42	532	15	21.9	23.1	33,232	1,517	547	21.9
Major Collector	10,545	383	646	26	347	16	16.3	14.5	10,928	672	363	16.3
Minor Collector	993	51	42	2	10	1	23.6	21.9	1,044	44	10	23.5
Ramps	4,486	250	801	50	656	42	5.6	5.0	4,736	851	697	5.6
Centroid Connector	15,431	303	620	12	N/A	N/A	N/A	N/A	15,733	632	N/A	N/A
Region Total	**174,542**	**10,652**	**8,432**	**467**	**4,248**	**264**	**20.7**	**22.8**	**185,194**	**8,899**	**4,512**	**20.8**
Midday												
Freeway (MF)	63,511	12,599	1,505	293	534	102	42.2	43.0	76,109	1,799	637	42.3
Freeway (HOV)	7,165	0	161	0	50	0	44.4	N/A	7,165	161	50	44.4
Expressway	1,529	259	35	6	10	2	44.2	45.4	1,787	40	12	44.4
Principal Arterial	30,321	1,817	1,064	71	255	25	28.5	25.6	32,139	1,135	280	28.3
Minor Arterial	22,711	1,203	780	41	129	8	29.1	29.5	23,914	820	137	29.1
Major Collector	6,864	423	270	24	80	13	25.5	17.3	7,287	294	93	24.8
Minor Collector	554	45	24	5	7	4	22.7	8.6	599	30	10	20.2

	VMT		VHT		Delay (Hours)		Speed (mph)		Total			
Facility Type	**Auto**	**Truck**	**Auto**	**Truck**	**Auto**	**Truck**	**Auto**	**Truck**	**VMT**	**VHT**	**Delay**	**Speed**
Ramps	4,358	438	347	45	205	31	12.5	9.8	4,796	392	236	12.2
Centroid Connector	14,517	527	579	21	N/A	N/A	N/A	N/A	15,044	600	N/A	N/A
Region Total	**151,529**	**17,310**	**4,766**	**506**	**1,271**	**184**	**31.8**	**34.2**	**168,839**	**5,272**	**1,455**	**32.0**
Night												
Freeway (MF)	40,421	13,547	695	227	75	23	58.2	59.6	53,968	922	98	58.5
Freeway (HOV)	3,669	0	62	0	5	0	59.3	N/A	3,669	62	5	59.3
Expressway	932	279	17	5	2	1	54.7	56.5	1,211	22	3	55.1
Principal Arterial	14,094	1,197	396	32	28	3	35.6	37.9	15,291	427	31	35.8
Minor Arterial	8,842	646	257	18	12	1	34.3	36.1	9,488	275	13	34.5
Major Collector	2,469	201	73	6	5	1	34.0	31.1	2,670	79	6	33.8
Minor Collector	201	24	6	1	*	*	31.0	29.3	225	7	*	30.8
Ramps	2,922	400	116	17	21	4	25.2	23.9	3,322	133	26	25.0
Centroid Connector	6,825	332	271	13	N/A	N/A	N/A	N/A	7,158	284	N/A	N/A
Region Total	**80,376**	**16,626**	**1,893**	**319**	**149**	**32**	**42.5**	**52.1**	**97,001**	**2,212**	**181**	**43.9**
Daily												
Freeway (MF)	210,173	38,293	6,164	934	2,950	355	34.1	41.0	248,466	7,098	3,305	35.0
Freeway (HOV)	22,485	0	628	0	276	0	35.8	N/A	22,485	628	276	35.8
Expressway	5,102	778	140	17	58	5	36.6	44.8	5,880	157	63	37.5
Principal Arterial	103,988	4,949	4,390	194	1,606	69	23.7	25.5	108,937	4,584	1,675	23.8
Minor Arterial	81,589	3,344	3,231	121	884	29	25.2	27.7	84,934	3,352	913	25.3
Major Collector	26,205	1,223	1,285	68	555	35	20.4	18.1	27,428	1,353	589	20.3
Minor Collector	2,256	143	94	10	22	5	23.9	14.3	2,399	104	27	23.0
Ramps	14,668	1,259	1,672	133	1,196	94	8.8	9.5	15,927	1,805	1,290	8.8
Centroid Connector	45,509	1,363	1,820	55	N/A	N/A	N/A	N/A	46,872	1,875	N/A	N/A
Region Total	**511,974**	**51,353**	**19,424**	**1,531**	**7,546**	**593**	**26.4**	**33.5**	**563,327**	**20,955**	**8,138**	**26.9**

* Value is less than 1,000.

Notes: MF for mixed flow or general purpose lanes, as opposed to HOV, high occupancy vehicle or carpool lanes. Centroid connectors are intra-zonal links used in regional travel demand models such as SCAG's to allocate trips from zone centroids to the highway network.

Numbers may not add due to rounding.

TABLE A11 PLAN 2035 VMT, VHT, DELAY, AND SPEED BY COUNTY AND TIME PERIOD

	VMT		VHT		Delay (Hours)		Speed (mph)		Total (Auto + Truck)			
County	Auto	Truck	Auto	Truck	Auto	Truck	Auto	Truck	VMT	VHT	Delay	Speed
AM PEAK												
Imperial	2,123	158	53	3	12	*	39.7	49.9	2,281	57	13	40.3
Los Angeles	48,232	2,482	1,900	86	724	37	25.4	28.7	50,714	1,987	761	25.5
Orange	16,863	682	642	24	254	11	26.3	28.0	17,545	667	265	26.3
Riverside	14,879	1,125	532	31	215	11	28.0	36.7	16,004	563	226	28.4
San Bernardino	16,493	1,688	482	44	142	15	34.2	38.3	18,182	526	157	34.5
Ventura	4,545	240	175	7	74	3	26.0	32.0	4,785	183	77	26.2
Region Total	**103,135**	**6,375**	**3,785**	**196**	**1,421**	**78**	**27.2**	**32.5**	**109,510**	**3,982**	**1,499**	**27.5**
PM PEAK												
Imperial	3,412	239	80	5	14	1	42.7	49.4	3,651	85	14	43.1
Los Angeles	81,423	3,715	3,995	160	1,939	85	20.4	23.2	85,138	4,155	2,025	20.5
Orange	28,414	1,062	1,213	45	545	24	23.4	23.6	29,475	1,258	569	23.4
Riverside	24,170	1,798	984	61	457	30	24.6	29.5	25,968	1,045	487	24.9
San Bernardino	27,245	2,772	894	85	320	37	30.5	32.8	30,017	979	357	30.7
Ventura	7,381	392	278	14	111	6	26.5	28.5	7,773	292	117	26.6
Region Total	**172,045**	**9,978**	**7,444**	**369**	**3,387**	**183**	**23.1**	**27.0**	**182,024**	**7,814**	**3,570**	**23.3**
MIDDAY												
Imperial	2,974	402	64	8	6	1	46.7	52.8	3,376	71	7	47.3
Los Angeles	69,510	6,263	2,260	188	574	65	30.8	33.3	75,773	2,448	639	31.0
Orange	23,495	1,772	695	49	154	15	33.8	35.9	25,267	744	169	33.9
Riverside	21,479	2,901	613	73	154	23	35.0	40.0	24,380	686	177	35.6
San Bernardino	23,806	4,293	596	95	103	22	39.9	45.0	28,099	692	125	40.6
Ventura	6,170	607	173	15	33	3	35.7	40.8	6,776	188	36	36.1
Region Total	**147,434**	**16,237**	**4,401**	**428**	**1,024**	**128**	**33.5**	**37.9**	**163,671**	**4,829**	**1,152**	**33.9**
NIGHT												
Imperial	1,489	396	30	7	1	*	50.2	57.3	1,886	37	1	51.6
Los Angeles	37,080	5,619	909	114	74	12	40.8	49.5	42,699	1,023	86	41.8
Orange	12,449	1,640	293	33	21	4	42.4	49.4	14,090	326	25	43.2
Riverside	11,060	3,045	241	54	13	4	45.8	56.8	14,105	295	17	47.8
San Bernardino	12,018	4,492	255	78	14	5	47.1	57.4	16,510	333	19	49.6

	VMT		VHT		Delay (Hours)		Speed (mph)		Total (Auto + Truck)			
County	Auto	Truck	Auto	Truck	Auto	Truck	Auto	Truck	VMT	VHT	Delay	Speed
Ventura	3,187	551	74	11	4	1	43.0	51.8	3,738	85	5	44.1
Region Total	**77,283**	**15,744**	**1,802**	**296**	**128**	**26**	**42.9**	**53.2**	**93,027**	**2,098**	**154**	**44.3**
					DAILY							
Imperial	9,998	1,196	227	23	33	2	44.1	53.1	11,194	249	35	44.9
Los Angeles	236,245	18,079	9,064	549	3,312	199	26.1	32.9	254,324	9,613	3,511	26.5
Orange	81,221	5,156	2,844	152	975	53	28.6	33.9	86,377	2,996	1,028	28.8
Riverside	71,588	8,870	2,370	218	839	67	30.2	40.8	80,457	2,588	907	31.1
San Bernardino	79,563	13,245	2,228	302	579	79	35.7	43.8	92,808	2,530	659	36.7
Ventura	21,283	1,789	700	47	221	13	30.4	38.3	23,072	747	235	30.9
Region Total	**499,897**	**48,335**	**17,433**	**1,290**	**5,959**	**415**	**28.7**	**37.5**	**548,232**	**18,723**	**6,374**	**29.3**

* Value is less than 1,000.
Numbers may not add due to rounding.

TABLE A12 PLAN 2035 VMT, VHT, DELAY, AND SPEED BY FACILITY TYPE AND TIME PERIOD

	VMT		VHT		Delay (Hours)		Speed (mph)		Total			
Facility Type	Auto	Truck	Auto	Truck	Auto	Truck	Auto	Truck	VMT	VHT	Delay	Speed
AM Peak												
Freeway (MF)	43,006	4,667	1,208	118	550	47	35.6	39.5	47,674	1,326	597	36.0
Freeway (HOV)	5,541	0	155	0	68	0	35.8	N/A	5,541	155	68	35.8
Expressway	1,611	115	37	2	11	1	43.1	48.1	1,726	40	12	43.4
Principal Arterial	21,264	648	903	28	331	11	23.5	23.5	21,912	931	342	23.5
Minor Arterial	15,974	438	607	16	141	4	26.3	27.6	16,412	623	145	26.3
Major Collector	4,442	151	188	7	62	3	23.6	21.7	4,593	195	65	23.6
Minor Collector	368	17	15	1	3	1	24.7	14.6	385	16	4	23.9
Ramps	2,967	156	351	17	254	12	8.5	9.3	3,123	367	266	8.5
Centroid Connector	7,963	182	322	7	N/A	N/A	N/A	N/A	8,145	329	N/A	N/A
Region Total	**103,135**	**6,375**	**3,785**	**196**	**1,421**	**78**	**27.2**	**32.5**	**109,510**	**3,982**	**1,499**	**27.5**
PM Peak												
Freeway (MF)	66,562	7,177	2,307	221	1,289	112	28.9	32.5	73,740	2,528	1,401	29.2
Freeway (HOV)	9,212	0	334	0	190	0	27.6	N/A	9,212	334	190	27.6
Expressway	2,488	183	56	4	15	1	44.8	46.1	2,671	59	16	44.9
Principal Arterial	36,975	1,048	1,797	49	793	22	20.6	21.3	38,024	1,847	815	20.6
Minor Arterial	29,504	763	1,288	31	412	10	22.9	24.3	30,267	1,319	422	22.9
Major Collector	7,844	268	442	19	216	11	17.7	14.4	8,113	461	227	17.6
Minor Collector	729	34	31	2	7	*	23.6	22.7	763	32	7	23.5
Ramps	4,622	230	617	33	465	26	7.5	7.0	4,851	650	491	7.5
Centroid Connector	14,109	275	573	11	N/A	N/A	N/A	N/A	14,383	584	N/A	N/A
Region Total	**172,045**	**9,978**	**7,444**	**369**	**3,387**	**183**	**23.1**	**27.0**	**182,024**	**7,814**	**3,570**	**23.3**
Midday												
Freeway (MF)	63,370	12,044	1,389	251	419	69	45.6	47.9	75,414	1,641	488	46.0
Freeway (HOV)	8,200	0	180	0	52	0	45.5	N/A	8,200	180	52	45.5
Expressway	2,327	294	46	6	8	1	51.0	51.6	2,621	51	9	51.1
Principal Arterial	29,526	1,635	1,014	63	219	21	29.1	26.0	31,161	1,077	240	28.9
Minor Arterial	20,724	1,026	709	34	104	6	29.2	29.9	21,750	744	110	29.3
Major Collector	5,215	315	201	17	53	8	26.0	18.4	5,529	218	61	25.4
Minor Collector	417	39	19	4	5	3	22.5	9.7	456	23	7	20.2

	VMT		VHT		Delay (Hours)		Speed (mph)		Total			
Facility Type	Auto	Truck	Auto	Truck	Auto	Truck	Auto	Truck	VMT	VHT	Delay	Speed
Ramps	4,418	406	308	33	163	20	14.4	12.2	4,825	341	184	14.1
Centroid Connector	13,237	477	536	19	N/A	N/A	N/A	N/A	13,714	555	N/A	N/A
Region Total	147,434	16,237	4,401	428	1,024	128	33.5	37.9	163,671	4,829	1,152	33.9
Night												
Freeway (MF)	39,254	12,971	669	215	66	19	58.7	60.4	52,225	883	85	59.1
Freeway (HOV)	4,097	0	70	0	6	0	58.9	N/A	4,097	70	6	58.9
Expressway	1,107	295	19	5	1	*	57.8	59.4	1,402	24	2	58.1
Principal Arterial	13,501	1,064	381	28	23	2	35.5	37.7	14,565	409	25	35.6
Minor Arterial	8,089	556	238	16	9	1	34.0	35.8	8,646	254	10	34.1
Major Collector	1,974	152	58	5	2	*	34.0	33.3	2,126	63	3	33.9
Minor Collector	148	20	5	1	*	*	29.8	28.3	168	6	*	29.6
Ramps	2,932	383	114	15	19	3	25.6	25.1	3,315	130	23	25.6
Centroid Connector	6,181	303	249	12	N/A	N/A	N/A	N/A	6,483	261	N/A	N/A
Region Total	**77,283**	**15,744**	**1,802**	**296**	**128**	**26**	**42.9**	**53.2**	**93,027**	**2,098**	**154**	**44.3**
Daily												
Freeway (MF)	212,193	36,860	5,572	805	2,324	248	38.1	45.8	249,053	6,377	2,572	39.1
Freeway (HOV)	27,050	0	739	0	317	0	36.6	N/A	27,050	739	317	36.6
Expressway	7,532	888	158	17	35	3	47.8	52.1	8,420	175	39	48.2
Principal Arterial	101,266	4,396	4,095	168	1,366	56	24.7	26.2	105,662	4,263	1,422	24.8
Minor Arterial	74,291	2,783	2,842	97	667	20	26.1	28.7	77,075	2,939	687	26.2
Major Collector	19,475	886	889	47	334	23	21.9	18.8	20,360	936	357	21.7
Minor Collector	1,662	110	69	7	15	4	24.0	14.9	1,772	77	19	23.1
Ramps	14,940	1,175	1,390	98	902	61	10.8	11.9	16,114	1,488	964	10.8
Centroid Connector	41,489	1,237	1,679	50	N/A	N/A	N/A	N/A	42,726	1,729	N/A	N/A
Region Total	**499,897**	**48,335**	**17,433**	**1,290**	**5,959**	**415**	**28.7**	**37.5**	**548,232**	**18,723**	**6,374**	**29.3**

* Value is less than 1,000.

Notes: MF for mixed flow or general purpose lanes, as opposed to HOV, high occupancy vehicle or carpool lanes. Centroid connectors are intra-zonal links used in regional travel demand models such as SCAG's to allocate trips from zone centroids to the highway network.

Numbers may not add due to rounding.